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By *B. L.*

LONDON, Printed for and Sold by S. Harding, on the Pavement in St. *Martin's-Lane.* 1750.

INTRODUCTION.

THE great Pleaſure that Builders and Workmen of all Kinds have of late Years taken in the Study of Architecture; and the great Advantages that have accrued to thoſe, for whom they have been employed; by having their Works executed in a much neater and more magnificent Manner than was ever done in this Kingdom before; has been the real Motive that induced me to the compiling of this Work, for their further Improvement.

Beſides, as the Study of Architecture is really delightful in all its Proceſs; its Practice is evidently of the greateſt Importance to Artificers in general; and its Rules ſo eaſy, as to be acquired at leiſure Times, when the Buſineſs of Days is over, by Way of Diverſion: 'Tis a Matter of very great Surprize to me, how any Perſon dare preſume to diſcourage others from the Study thereof, and thereby render them very often leſs ſerviceable to the Publick than ſo many Brutes.

But to prevent this Infection from diffuſing its poiſonous Effluvia's any further; and in Conſideration that amongſt all Sorts of People, there are ſome, in whom Nature has implanted that noble Faculty of the Soul, called REASON, *whereby we judge of Things:* I have therefore, at a very grea Expence, compiled this Work for the common Good of all *Men of Reaſon*, whoſe Buſineſſes requir the Knowledge of this Art, and who deſire to become Proficients therein.

The firſt Work to be done in order thereto, is perfectly to underſtand the Five Orders of Columns, which here I have placed precedent to the Deſigns for that Purpoſe; and which I peremptorily admoniſh, be well underſtood, before any Proceeding be made to attempt the Art of Deſigning.

The Five Orders of Columns have their Members ſo eaſily adjuſted, that the Reader, after having once read their Explanations, need never read them a ſecond Time. Nor will their general Proportions eſcape his Memory, after having practiſed them about half a Dozen Times.

The Deſigns contained herein, and the Orders preceding them, are in general adjuſted by Aliquot Parts; ſo that when the Height of any Work to be made, is known, (which in all Caſes muſt firſt be given) and divided into ſome certain Number of equal Parts, as affixed to every Deſign; the Heights and Projections of its Members are thereby determined. And, that young Students may not be at a Loſs herein, I have, for their further Inſtruction ſhewn their particular Members, with their Meaſures at large; which the Deſigns of *Inigo Jones*, and all other Maſters to this Time, are defective in, and conſequently are of no more Uſe to Workmen, than ſo many Pictures to gaze at; not ſo many Rules, or Examples to work by, or after; unleſs to ſuch, who underſtand the Architecture thereof, as well as their Authors, who deſigned them.

I ſhall now proceed to explain the Orders in the moſt familiar Manner; which will render the Underſtanding of all the following Deſigns conſpicuous to every Capacity.

B. LANGLEY.

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THE ART of *DESIGNING* and *WORKING* THE ORNAMENTAL PARTS of *BUILDINGS.*

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CHAP. I.

Of the Manner of Proportioning the Five Orders of Columns in Architecture by Aliquot Parts.

I. *Of the* TUSCAN ORDER.

PROB. I. *To proportion the Heights of the principal Parts of the* Tuſcan *Order*, Fig. I. Plate I.

P*RACTICE.* Divide *a o* a given Height into 5 equal Parts, the lower 1 Part *k o* is the Height of the Pedeſtal. Divide *a k* the remaining 4 Parts into 5 equal Parts, the upper 1 Part *a d*, is the Height of the Entablature, and *d k*, the lower 4, of the Column.

PROB. II. *To proportion the Heights of the Principal Parts of the* Tuſcan *Pedeſtal*, Fig. II.

Divide *v w*, a given Height into 4 Parts, the lower 1, is the Height of the Plinth, $\frac{1}{3}$ of the next 1, of the Mouldings on the Plinth, and half the upper 1 of the Cornice.

PROB. III. *To proportion the Heights of the Members on the Plinth*; *and of the Cornice of the* Tuſcan *Pedeſtal.*

If the Mouldings on the Plinth be an Inverted Cima recta between two Fillets, divide the Height in 6, give 1 to each Fillet, and 4 to the Cima; but if the Mouldings are a Caveto on a Fillet, give 4 to the Caveto and 2 to the Fillet. Divide the Height of the Cornice in 6, give the upper 1 to the Regula E, the next 3 to the Faſcia F, and the remaining 2 to a Cima reverſa, or a Caveto with its Fillet, whoſe Height is half one Part.

PROB. IV. *To determine the Projections of the Dado, Baſe and Cornice of the* Tuſcan *Pedeſtal.* Fig. II. Plate I.

(1.) Divide Q N, equal to the Height of the Baſe in 5 Parts, and the upper 1 in 7 Parts; Make *z* O the Projection of the Dado, equal to 4 Parts and $\frac{4}{7}$. (2.) The Projection of the Plinth (*q p*) is equal to (*r q*) the Height of the Mouldings on the Plinth, as alſo is the Projection of the Cornice, from the Upright of the Dado, in every Order. Draw *x y* at Pleaſure, at any Part againſt the Dado, which divide in 6 Parts, and terminate the Members in the Baſe and Cornice, as is expreſſed by the dotted Lines proceeding upward and downward from them.

Fig. G. exhibits the Manner of deſcribing a Cima reverſa at large, whoſe Projection is $\frac{5}{6}$ of its Height.

PROB. V. *To proportion the Heights of the principal Parts of the* Tuſcan *Column,* Fig. I. Pl. II.

(1.) Divide the given Height in 7 equal Parts, and take 1 for the Diameter of the Column at its Baſe; therefore note, that the Height of the Column is 7 Diameters. (2.) The Height of the Baſe, and of the Capital, are each half a Diameter.

PROB. VI. *To proportion the Heights of the Members of the Baſe of the* Tuſcan *Column.*

Divide *s t* the Height of the Baſe in 2 Parts, as the Baſe on the Pedeſtal, Fig. II. Plate I. the lower 1 is the Height of the Plinth D, and the upper 1 of its Torus C, with the Cincture B, which is a fourth Part thereof.

PROB. VII. *To proportion the Heights of the Members of the* Tuſcan *Capital.*

Divide, the Height of the Capital M R, into 3 Parts, as in Fig. II. Plate II. give the upper 1 to its Abacus M N, the Middle 1 to the Ovolo O with its Fillet P, which is a ſixth Part, and the lower 1 to Q the Neck of the Capital. The Height of the Aſtragal R S, is equal to Half the Height of the Neck, which divide in 3: Give 2 to the Aſtragal R, and 1 to the Fillet S. *Note*, The Aſtragal in every Order is a Part of the Shaft, not of the Capital.

PROB. VIII. *To diminiſh the Shaft of the* Tuſcan, *or any other Column*, Fig. I. Plate II.

(1.) Divide the given Height of the Shaft between the Cincture B, and the Aſtragal A, into 3 equal Parts, and draw the Line *n x y*, through the firſt Part, parallel to the Cincture 4, 5; make B 4, B 5, and *x n*, *x y*, each equal to Half a Diameter, and draw the Lines 4 *n*, 5 *y*; make A *b*, and A *c*, each equal to $\frac{1}{4}$ or $\frac{4}{5}$ of *n x*, according to what Quantity you have a Mind to diminiſh the Shaft; ſome making the Diminution $\frac{1}{4}$ or $\frac{1}{5}$, as in this Example. (2.) On *x* deſcribe the Semicircle *n r*, 1 *y*, and draw the Lines *b r*, and *c* 1, from the Points *b c*, parallel to the central Line A B. Divide the Arches *n r* and 1 *y*, each into any Number of like equal Parts, ſuppoſe four, as at *o p q*, and 2, 3, *z*, and draw the Ordinates *q* 2, *p* 3, and *o z*. (3.) Divide A *x* into the ſame Number of equal Parts, as in *n r*, or 1 *y*, as at *l h d*, and draw the Lines, *e f* equal to *q* 2; *g i* equal to *p* 3, and *k m* equal to *o z*. (4.) From *n*, through the Points *k g e*, draw the curved Line *n k g e b*, and from *y*, through the Points *m i f*, the curved Line *y m i f*, which completes the Diminution of the Shaft as required.

PROB. IX. *To determine the Projections of the Members in the Baſe of the* Tuſcan *Column*, Fig. I. Plate I.

(1.) Divide the Semidiameter in 3 Parts, and turn 1 Part out for the Projection of the Plinth, which, in every Order, ſtands exactly over the Dado of the Pedeſtal. (2.) The Projection of the Torus is always the ſame as of the Plinth. (3.) Divide the Projection of the Plinth before the Upright of the Shaft into 4 Parts, and the third Part into 4, then the firſt 1 Part terminates the Projection of the Cincture B.

PROB. X. *To determine the Projections of the Members in the* Tuſcan *Capital*, Fig. II. Pl. II.

Divide the Semidiameter of the Shaft continued to the Abacus into 2 Parts, as at *f*, aud make the Projection of the Abacus, equal to 1 of thoſe Parts, when the Abacus is finiſhed with a Fillet, and to $\frac{5}{6}$ of 1 Part, when without a Fillet. The Projection of the Fillet under the Aſtragal is equal to twice its own Height, and the Fillet under the Ovolo, to its Height.

PROB.

PROB. XI. *To proportion the Heights of the principal Parts of the* Tuſcan *Entablature*, Fig. II. Plate II.

Divide A M the given Height, into 7 equal Parts; give 2 to the Architrave, 2 to the Freeze, and 3 to the Cornice.

PROB. XII. *To proportion the Heights of the Members of the* Tuſcan *Architrave.*

If the Architrave is to conſiſt but of 1 Faſcia, divide its Height in 7 Parts, and give 1 and $\frac{1}{3}$ to the Height of the Tenia I, and the Remainder to the Faſcia K; but if of two Faſcia's, give the lower 2 to the ſmall Faſcia, the next 4 to the great Faſcia, and the upper 1 to the Tenia.

PROB. XIII. *To proportion the Heights of the Members of the* Tuſcan *Cornice.*

The Height of the Cornice conſiſting of 3 Parts, divide the upper 1 Part in 4, and when this Entablature is finiſhed with a Cima recta, give the upper 1 to its Fillet; but when with an Ovolo, give the lower 1 to its Aſtragal. The middle 1 Part of the Cornice being divided in 6 Parts, give the upper 1 to the Fillet C, and the other 5 to the Corona D. The lower 1 Part of the Cornice, divided in 2 Parts, give the upper 1 to the Ovolo E, and the other 1 to its Caveto G, and Fillet E, which is $\frac{1}{4}$ Part thereof.

PROB. XIV. *To determine the Projectures of the Members in the* Tuſcan *Architrave and Cornice*, Fig. II. Plate II.

(1.) The Projection of the lower Faſcia of the Architrave, and of the Freeze, in every Order, is always the ſame from the central Line of the Column as the Upright of the Column, at its Aſtragal; and therefore are all directly over each other. It is from the upright Line of the Face of the Freeze, that the Projections of all the Members in every Architrave and Cornice of each Order, is accounted. (2.) The Projection of the Tenia I is equal to its Height, and the upper Faſcia when the Architrave has two, projects $\frac{1}{3}$ thereof. (3.) The Projection of the Cornice, is (as 'tis in all the other Orders, the *Dorick* only excepted) equal to its own Height. Draw *b c*, equal to the whole Projection, which divide in 3 equal Parts; then $\frac{1}{2}$ the firſt Part, terminates the Fillet F, of the Caveto G. The firſt Part terminates the Ovolo E, the ſecond Part the Corona D, and the firſt ſixth Part of the laſt Part, the Fillet C. And thus this Order is compleated, and which being practiced about half a dozen Times, will render the underſtanding of this and the following Order, eaſy and delightful.

II. *Of the* DORICK ORDER.

PROB. I. *To proportion the Heights of the principal Parts of the* Dorick *Order*, Fig. I. Pl. III.

PRACTICE. Divide *a k* a given Height, into 5 Parts, (as before in the *Tuſcan*) the lower 1 Part *i k*, is the Height of the Pedeſtal. Divide *a i* the remaining 4 Parts in 5 Parts, the upper 1 Part *a f* is the Entablature, and *f i*, the lower 4 Parts, of the Column. Here you ſee that the Manner of proportioning the principal Parts of the *Tuſcan* and *Dorick* Orders, is the ſame.

PROB. II. *To proportion the Heights of the principal Parts of the* Dorick *Pedeſtal*, Fig. II. Pl. III.

Divide the Height in 4 Parts, give 1 and $\frac{1}{3}$ to the Baſe; $\frac{1}{2}$ the upper 1 to the Cornice, and the Remains to the Dado.

PROB. III. *To proportion the Heights of the Members on the Plinth, and of the Cornice of the* Dorick *Pedeſtal*, Fig. II. Plate III.

(1.) Divide *o q* the Height of the Mouldings on the Plinth, in 8 Parts, give the lower 1 Part to the Fillet K, the next 4 to the Cima I, and the upper 3, to an Aſtragal H, and Fillet G; or to a Fillet and Caveto. (2.) Divide the Height of the Cornice in 2 Parts, $\frac{1}{4}$ of the upper 1, is the Height of the Regula A, and the Remainder, of the Faſcia B. The upper Half of the lower 1, is the Height of the Ovolo C, and the lower Half divided in 3, give the upper 1 to the Fillet D, and lower 2 to a Cima Inverſa, or Caveto E.

PROB. IV. *To determine the Projections of the Dado, Baſe, and Cornice of the* Dorick *Pedeſtal*, Fig. II. Plate III.

Make *u w* the Projection of the Dado, equal to *x y*, which is the Height of the Plinth divided in 5 Parts, and $\frac{2}{3}$ of the upper Part divided in 3, turned up. The Projection of the Plinth and Cornice before the Upright of the Dado, is (as before obſerved in the *Tuſcan* Order) always equal to the Height of the Mouldings on the Plinth, which here at *m n*, being divided in 4 Parts, the Projections of the Members in the Cornice and Baſe are determined, as exhibited by the perpendicular dotted Lines.

PROB. V. *To proportion the Heights of the principal Parts of the* Dorick *Column*, Fig. I. Pl. III.

(1.) Divide *f i* the Height of the Column into 8 Parts, and take 1 Part for the Diameter of the Column at its Baſe: Therefore note, that the Height of the *Dorick* Column is 8 Diameters. (2.) The Height of the *Dorick* Baſe and Capital are each Half a Diameter, as thoſe of the *Tuſcan*.

PROB. VI. *To proportion the Heights of the Baſe of the* Dorick *Column*.

Divide *f b*, Fig. II. Plate III. in 3 Parts, the lower 1 Part is the Height of the Plinth T, and $\frac{3}{4}$ of the Middle 1, of the lower Torus S. Half the upper 1 Part, is the Height of the upper Torus O, and the Remains between the two Torus's being divided in 6 Parts, give the upper and lower, to the two Fillets P and R, and the Middle 4 to the Scotia Q. The Height of the Cincture N is half of the Height of the upper Torus.

PROB. VII. *To proportion the Heights of the* Dorick *Capital.*

Divide *a b* the Height of the Capital, Fig. II. Plate III. into 3 Parts, and $\frac{1}{2}$ the upper 1, into 3; give the upper 1 to the Fillet A, the other 2 to the Cima reverſa B, and the other $\frac{1}{4}$ Part to the Abacus C. Divide the Middle Part in 3, give the upper 2 to the Ovolo D, and the other 1 to an Aſtragal and Fillet, or Fillet and Caveto, or Cima reverſa, or to three Annulets, at Pleaſure. The Height of the Hypotrachelium G, or Neck of the Capital, is the lower 1 Part, and the Height of the Aſtragal $\frac{1}{2}$ thereof, as before in the *Tuſcan*. The Shaft of this Column is diminiſhed $\frac{1}{5}$ at its Aſtragal in Manner aforeſaid.

PROB. VIII. *To determine the Projections of the Members of the Baſe of the* Dorick *Column.*

(1.) Divide the Semidiameter *i* 3, in 3 Parts, and turn out 1 Part from *i* to *k*, for the Projection of the Plinth, before the Upright of the Column. (2.) Divide the Projection *k i*, in 4 Parts, the firſt one and a half, terminates the Projection of the Fillet R; and 2 Parts and half, the Centre of the upper Torus O, and Cincture M.

PROB. IX. *To deſcribe the Scotia* Q *at large, as at g*, Plate III.

Divide its Height in 3 Parts, and ſet one Part, from the ſecond Part towards the Right Hand; then the Points * * are the Centers on which the Scotia may be deſcribed as required.

PROB. X. *To determine the Projections of the Members of the* Dorick *Capital*, Fig. II. Plate III.

Divide the Semidiameter of the Column at its Aſtragal on its Abacus, into 2 Parts, and turn out 1 Part for the Projection of the Abacus; which divide in 4 Parts, and terminate the Projections of the Members, as exhibited by the dotted perpendicular Lines. The Projection of the Aſtragal H I, is determined the ſame, as that of the *Tuſcan* Order.

PROB. XI. *To proportion the Heights of the principal Parts of the* Dorick *Entablature*, Plate IV.

Divide *a b*, the given Height into 8 equal Parts, give 2 to the Architrave M N O P, 3 to the Freeze L, and 3 to the Cornice.

PROB. XII. *To proportion the Heights of the Members of the* Dorick *Architrave.*

Divide the upper 1 Part of the Architrave in 3, the upper 1 is the Height of the Tenia M, and the lower 2 Parts, divided in 3 Parts, the upper 1 Part is the Height of the Fillet N, and the next 3 Parts of the Gutta's or Drops O.

PROB. XIII. *To proportion the Heights of the Members of the* Dorick *Cornice.*

Divide the two upper Parts of the Height of the Cornice into 3 Parts, and the upper 1, in 4 Parts; give the upper 1 to the Regula A, and the other 3 to the Caveto or Cima recta B. Divide the next Part in 3, give half the upper 1 to the Fillet C, and the Remains to the Corona D. Divide the third Part in 3, and the upper 1 thereof, in 3; of which, give the upper 1 to the Fillet E, the other 2 to the Cima *reverſa* F; and the Reſidue of this Part to G, the Faſcia of the Mutule E F G. Divide the lower third Part of the Height of the whole Cornice into 3 Parts, and give the lower 1 to K, the Capping of the Triglyphs; divide the next 2, each into 3; give the lower 1 to the Fillet I, and the next 4 to the Ovolo H, or to the Ovolo, with its Aſtragal on the Fillet I. The Height of the Freeze being in 3, divide the upper in 3, and the ſecond will terminate the Heights of the Channels in the Triglyphs; as half the middle 1, doth that of the Coffer or hollow Pannel, in the Metope Q.

PROB. XIV. *To determine the Projectures of the Members in the* Dorick *Entablature*, Plate IV.

(1.) As the Projection of the Cornice is equal to half the Height of the whole Entablature, therefore draw a Line from any Part of the Freeze, as *c d*, equal thereto, which divide in 4 Parts, and the firſt, third and laſt, each into 3 Parts, from whence determine the Projection of every Member as expreſſed by the perpendicular dotted Lines which paſs through them from the Profile to the Plan.

PROB. XV. *To proportion a Triglyph, and Metope.*

The Breadth of each Triglyph is always equal to half the Diameter of the Column at its Baſe; and the Metope or Diſtance between them, ſhould always be equal to the Height of the Freeze. The Breadth of each Triglyph being divided into 12 Parts, and Lines drawn, as the dotted Lines 1, 2, 3, *&c.* will form the Limits of the Channellings, and ſix Gutta's, or Drops, under them. As by the Mutule S, 'tis evident, that the Projection is very conſiderable, I have therefore added the Plan of the Planceer of the Cornice, wherein VVV repreſents the under Surface of the Mutules, as they are generaly enriched with their 36 Drops, commonly called Bells, and XX are hollow Pannels, or Coffers, enriched with Roſes. By the perpendicular dotted Lines, 'tis evident, that the Diſtances of the Members in the Plan, are equal to their reſpective Projections in the Profile.

Fig. W exhibits two Methods for fluting the Shafts of *Dorick* Columns; that on the Right hand has no Fillets, as was anciently practiced, and which contain 20 in Number; the Flutings on the Left, are after the modern Manner, and contain 24 in Number.

PROB. XVI. *To divide the Flutes of the* Dorick *Shaft, after the ancient Manner.*

Divide the Circumference of the Column into 20 equal Parts, and draw the Chord Line of each Part, on every of which, complete an equilateral Triangle; then on the Out-Angle of every Triangle, with the Radius of one Side, deſcribe the Curve of each Flute.

PROB. XVII. *To divide the Flutes and Fillets of the* Dorick *Shaft, after the modern Manner.*

(1.) Divide the Circumference of the Column into 20, but by ſome 'tis divided into 24 Parts. (2.) Divide any one Part into 6 Parts, and with a Radius of 3 of thoſe Parts, on every of the 20, or 24 Points deſcribe the Flutes, which will leave between them the Fillets required.

III. *Of the* IONICK ORDER.

PROB. I. *To proportion the Heights of the principal Parts of the* Ionick *Order*, Fig. I. Plate V.

PRACTICE. (1.) Divide *a l*, a given Height, into 5 Parts, and give the lower 1 to the Pedeſtal, as in the preceding Orders. (2.) Divide *a g* the Remainder, into 6 Parts, the upper 1 Part *a d* is the Height of the Entablature, and *d g* the lower 5 Parts, of the Column.

PROB. II. *To proportion the Heights of the principal Parts of the* Ionick *Pedeſtal*, Fig. II. Pl. V.

Divide the given Height in 4 equal Parts, give the lower 1 to the Plinth N; one third of the next to the Mouldings on the Plinth, including the Hollow on the Aſtragal, when uſed inſtead of a Caveto, (as is ſometimes done); half the upper 1 to the Cornice *y a*, and the Remains to the Dado *a b*.

PROB. III. *To proportion the Heights of the Members on the Plinth*; *and of the Cornice of the* Ionick *Pedeſtal*, Fig. II. Plate V.

(1.) Divide the Height of the Mouldings on the Baſe into 8 Parts; give the lower 1 to the Fillet M, the next 4 to the Cima recta L; the next 1 and a half to the Aſtragal K; half the next 1 to the Fillet I; and the remaining 1 and a half to a Caveto, or Hollow as H. (2.) Divide *y a*, the Height of the Cornice, into 3 Parts, and each Part into 4 Parts, then the Whole is in 12 Parts; give the upper 1 to the Regula A; the next 2 to the Caveto, or Cima reverſa B; the next 3 Parts to the Faſcia or Platband C; the next 3 to the Cima recta D, (which is often made an Ovolo;) the next 1 to the Aſtragal E, and the remaining 2 to a Caveto, or Cima reverſa, as F.

PROB. IV. *To determine the Projections of the Dado, Baſe and Cornice of the* Ionick *Pedeſtal*, Fig. II. Plate V.

(1.) Divide the Height of the Plinth into three Parts, the upper 1 into 9, and the upper 1 of the 9 into 3; from the firſt of which draw the Line *f c*, cutting the central Line in *c*; make *x d* the Projection of the Dado, equal to *c z*. (2.) Make *g f* equal to one third of the Plinth's Height, for the Projection of the Plinth and Cornice before the Dado. (3.) In any Place againſt the Dado, as at *s*, draw the Line *r s*, equal to *f g*; which divide in 4 Parts; ſubdivide them again as by Inſpection is ſhewn, and terminate every Member as expreſſed by the perpendicular dotted Lines proceeding from thence.

PROB. V. *To proportion the Heights of the principal Parts of the* Ionick *Column.*

Divide *d g*, Fig. I. Plate V. into 9 Parts, and take 1 Part for the Diameter of the Column at its Baſe. The Height of the Baſe is half a Diameter, as alſo is the Height of the Capital, including the Height of its Volute.

PROB. VI. *To proportion the Heights of the Members of the Baſe of the* Ionick *Column.*

Divide *o p*, the given Height, (Fig. II. Pl. V.) in 3 Parts; the lower 1, is the Height of the Plinth S. Divide the upper 2 Parts in 9, the firſt 3 Parts is the Height of the lower Torus R; two thirds of the next Part, of the Fillet Q; the uppermoſt two and half, of the upper Torus N; which is made with a Bead under it, the half Part is given to the Bead, and but 2 to the Torus. The remaining half Part is given to the Fillet O. The Height of the Aſtragal with its Fillet, when uſed on the upper Torus, is equal to half the Height of the upper Torus, but when a Cincture only is placed there, its Height is two fifths of the upper Torus.

PROB. VII. *To proportion the Heights of the Members of the* Ionick *Capital*, Fig. II. Plate V.

(1.) Divide *v v*, the given Height, into three Parts, and half the upper 1 into 4 Parts, then the upper 3 Parts is the Height of the Ovolo A, of the Abacus; and the lower 1 of the Fillet B. (2.) Divide *w w*, equal to $\frac{5}{6}$ of *v v*, in 8 Parts; give the upper 1 and a half to the Caveto C; the next half to the Fillet D; the next 2 to the Ovolo E; the next 1 to the Aſtragal F, and the next half to its Fillet G; then the remaining two halfs will be the Depth that the Volutes will deſcend. The Shaft of this Column is diminiſhed at its Aſtragal, one ſixth of its Diameter at the Baſe.

PROB. VIII. *To determine the Projectures of the Members of the Baſe of the* Ionick *Capital*, Fig. II. Plate V.

(1.) Divide the Semidiameter 1 *y* in 3 Parts, and turn out 1 Part, for the Projection of the Plinth S, and Torus R. (2.) Divide the Projection of the Plinth before the Upright of the Column into three Parts, the firſt 1 terminates the Centre of the lower Torus, and the ſecond of the Cincture L, divide the middle Part in 4, half the firſt 1 terminates the Fillet Q, and half the laſt, the Fillet O. The Scotia P is deſcribed at large, as in Fig. III.

PROB. IX. *To determine the Projectures of the Members of the* Ionick *Capital*, Fig. II. Pl. VII.

Place the Diameter of the Column at its Baſe divided into 60 Minutes, as is done between F and E, and continue it 15 Minutes both ways to Y and Z. This done, ſet 45 Minutes on each Side the central Line which terminates the Ovolo A, in Plate V. Alſo ſet 40 Minutes on each Side for the Projection of the Fillet B; 38 for the Projection of the Caveto C, and 35 for the Ovolo E. The Projection of the Fillet G, is its own Height and two thirds thereof, over which the Aſtragal projects half its own Height. The next Thing in order to complete this Capital, is to deſcribe its Volutes as following.

PROB. X. *To deſcribe the* Ionick Volute, Plate VII.

(1.) Divide *a* X, a given Height of a Capital, into 3 Parts, and the upper 1 Part in 2 Parts at *c*, and proceed to complete all the Members as taught in the laſt Problem. (2.) On *p* the Center of the Aſtragal deſcribe the Circle *r o x q* for the Eye of the Volute, through whoſe Center *p*, draw the perpendicular Line *n a p q* 4, alſo the horizontal Line *r p s*, at right Angles thereto; and complete the Geometrical Squares *r o x q*; whoſe Sides divide each into two equal Parts at the Points 2, 1, 3, 4, and draw the Diameters 2, 4; and 1, 3. (3.) Divide each Semidiameter into 3 equal Parts, at the Points 6, 10; 5, 9; 11, 7; and 12, 8; then the Points 1 2 3 4 5 6 7 8 9 10 11 12, are 12 Centers on which the Out-line of the Volute is deſcribed; for the Point 1 is the Center of the Arch *n b*; the Point 2, of the Arch *b e*; the Point 3, of the Arch *e g*; the Point 4 of the Arch *g h*; the Point 5, of the Arch *h k*, &c. (3.) Divide W Z in 4 Parts; the upper 1 equal to *n a*, is the Breadth of the Liſt; which divide in 12 Parts, of which make *b c* equal to 11; *e d* equal to 10; *g f* equal to 9; *h i* equal to 8; *k l* equal to 7, *&c.* ſtill diminiſhing 1 at every Quarter. This done divide the Diſtance between every two Centers, as between 2 and 6; 1 and 5, *&c.* into 5 Parts, and the 12 outermoſt ones will be the 12 Centers, on which the inward Line of the Liſt may be deſcribed, which from the Point *a* will paſs through the Points *c d f i l*, &c. and complete the Volute as required.

To make the *Ionick* Volute well underſtood, I have given the Plan of a Quarter Part of its Capital, Fig. III. Plate VIII. wherein obſerve; that as the Volutes are placed anglewiſe, or rather diagonally; therefore when we ſtand directly before a Column, though they are really circular, as in Plate VII. yet they will appear elliptical; as having their Breadths foreſhorten'd by being ſeen in an oblique View; and therefore when we make a Drawing of this Capital, the Volutes muſt be made elliptical, as in Fig. II. Plate VIII.

PROB. XI. *To divide the Flutes and Fillets of a round or ſquare* Ionick *Column*, Fig. III. Plate VIII.

Firſt, *Of a round Column*, as the Quarter Part M K I; divide the Circumference of the Pillar into 24 equal Parts, and each Part into 8 Parts; with the Radius of 3 of thoſe 8 Parts, on every of the 24 Parts, deſcribe the Flutes, as before done in the *Dorick* Order.

Secondly, *Of a ſquare Column*, as the Quarter Part K A L; divide each Semidiameter, or each Side of the Column, into 31 Parts, give 6 to each Flute, 2 to each Fillet and Bead at the Angles, when the Semidiameters are divided into 31 Parts; and 3 to each Flute, and 1 to each Fillet, and Bead, at the Angles, when a Side of the Column is divided into the ſame Number of Parts. On the Right Hand, at the lower Angle of Plate VIII. I have deſcribed the Bead A at large, by which the young Student may ſee that 'tis no more, than three fourths of a Circle inſcribed in a geometrical Square.

As the Ovolo of this Capital is generally enriched with Eggs and Darts, commonly called Anchors, I ſhall therefore ſhew at large, the manner of deſcribing them.

PROB. XII. *To deſcribe Eggs and Darts for the Enrichment of an Ovolo*, Fig. I. Plate VIII.

Firſt, *To proportion their Diſtances.*

Divide the Height into 9 Parts, and at the Diſtance of 7 of thoſe Parts, draw the central Lines of the Eggs and Darts.

Secondly, *To deſcribe an Egg, as* Fig. B.

The Height of the central Line being divided in 9 Parts, with a Radius equal to 3 Parts, on the Point 6, the third Part from the Top, deſcribe a Semicircle. On the Point 3, the third Point from the Bottom, with a Radius of 2 Parts, deſcribe an entire Circle. Draw down the Lines 4 *a*, 4 *a*, each equal to 3 Parts, and through the Point 3, draw the Lines *a b* and *a c*. On the Points *a a*, with the Radius *a b*, deſcribe the Side Curves, which will complete the Egg, as required.

Thirdly, *To deſcribe the inward Curve of the Husk*, Fig. C.

Draw the Lines 4 *a*, 4 *a*, as before, but make each equal to 2 Parts. Through the Point *d*, which is the Midſt between the Points 3 and 4, draw the Lines *a b* and *a c* of Length at Pleaſure. On *d* with the Radius of 3 Parts deſcribe the Arch *b c*, and on the Points *a a*, with the Radius *a b*, deſcribe the Arches *b a* 4 and *c a* 4, which compleats the inward Line as required.

Fourthly, *To deſcribe the Outward Line of the Husk*, Fig D.

Draw 3 *a*, 3 *a*, each 1 Part in Length, and through the Point *b*, which is the Midſt between the Points 4 and 5, draw the Lines *a b c*, and *a b d*, of Length at Pleaſure. On the Point *b* with a Radius equal to 4 Parts and an half deſcribe the Arch *c d*. On the Points *a a*, with the Radius *a c*, deſcribe the upper Side Curves, which completes the Out-curve as required.

Fifthly, *To deſcribe a Dart.*

Divide one Part on each Side its central Line in 2 Parts, and from the angular Point of the Dart, draw the interior Lines; ſet 2 Parts up from the angular Point, and from that Point, draw Lines to 14 Parts Diſtance on the Top Line; alſo from the angular Point draw Lines up to 7 Parts on each Side its central Line. Then draw Lines from the angular Point to 1 Part on each Side its central Line, will complete a Dart as required. Fig. A repreſents the Lines of all theſe laſt Four Operations, compriz'd in one.

PROB. XIII. *To proportion the Heights of the principal Parts of the* Ionick *Entablature*, Plate VI.

Divide the Height *a e* into 10 Parts, give 3 to the Architrave, 3 to the Freeze, and 4 to the Cornice.

PROB. XIV. *To proportion the Heights of the Members of the* Ionick *Architrave*, Plate VI.

Divide *d f* the Height, in 4 Parts; the firſt one is the Height of the lower Faſcia R, and one third of the next Part of the Cima Reverſa Q; divide the upper Part in 3, give the upper third Part to the Tenia N, and the other 2 Parts to the Cima reverſa, or Caveto O. The remaining one Part and two thirds is the Height of the upper Faſcia P.

PROB. XV. *To proportion the Heights of the Members in the* Ionick *Cornice*, Plate VI.

(1.) The Height being in 4 Parts, divide the upper 1 in 4, and when the Cima recta B, has no Aſtragal under it, give the upper 1 to the Regula A, and 2 and two thirds to the Cima; but if an Aſtragal be introduced under the Cima, then give half the upper 1 to the Regula A; the next 2 and an half to the Cima recta B, and remaining two thirds of 1 to the Aſtragal on the Fillet C. (2.) Divide the ſecond 1 Part in 4; give the upper 1 to the Cima reverſa D, and the lower 3 to the Corona E. (3.) Divide the third 1, from the Top in 4, and the upper 1 thereof in 4; of which give the upper 1 to the Fillet F, and the other 3 to the Cima reverſa G. The Depth of the Face of the Modillion is two Parts and an half. (4.) Divide the lower fourth Part in 2 Parts, and give the upper 1 to the Ovolo I: And the lower 1 divided in 5, give the upper 1 to the Fillet K, and the other 4 to a Caveto or Cima reverſa, L.

PROB. XVI. *To determine the Projections of the Members of the* Ionick *Architrave and Freeze.*

(1.) The Projection of the Tenia is equal to one fourth of the Height of the whole Architrave; and the great Faſcia P, to one third thereof. (2.) The Projection of the Freeze is equal to that of the Architrave.

PROB. XVII. *To determine the Projections of the Members of the* Ionick *Cornice.*

The Projection of the whole Cornice is always equal to its whole Height, and its particular Members have their Projections determined as follows, *viz.* draw a Line as *w x*, equal to the Projection of the whole Cornice, which divide in 4 Parts; ſubdivide them again, and terminate each Member as exhibited by the dotted perpendicular Lines, which paſs through the Diviſions from the Profile to the Plan, or Planceer of the Cornice.

PROB. XVIII. *To deſcribe the under Curvature of an* Ionick *Modillion at large*, Fig. V. Plate XII.

The Projection being found, as in the laſt Problem, which ſuppoſe to be *r n*, or *x* 6; divide it in 6 Parts. On the Point *w*, erect the Perpendicular *w v*, equal to 1 Part, and on the Point 2, deſcribe the Arch 1 *v*; on the Point 5, erect the Perpendicular 5 *s*, equal to 2 Parts and an half; make *v z* equal to 5 *s*, and draw the Line *s z*. On the Points *s* and *z*, with the Diſtance *s* 5, deſcribe the compound Curve *v* 5, which completes the Curve of its Planceer. The Breadth of the Face of a Modillion, is 10 Minutes, or one ſixth Part of the Diameter of the Column at its Baſe. The Interval or Diſtance between them in a Cornice over Columns, is 25 Minutes, or $\frac{5}{6}$ of a Semidiameter: But in a Cornice over Pilaſters, which are not diminiſhed, the Interval muſt be 30 Minutes or a Semidiameter, preciſely. In the Plan of the Cornice Plate VI. S S, *&c.* repreſents the Planceers of the Modillions; and T T, *&c.* the Coffers or hollow Pannels enriched with Roſes in the Intervals.

IV. *Of the* CORINTHIAN ORDER.

PROB. I. *To proportion the Heights of the principal Parts of the* Corinthian *Order.* Fig. I. Plate IX.

PRACTICE. (1.) Divide the given Height as *e k* in 5 Parts; and give the lower 1 Part *i k*, to the Height of the Pedeſtal. (2.) Divide *c i*, the remaining 4 Parts, in 6 Parts; the upper 1 *c d*, is the Height of the Entablature, and *f i* the lower 5, of the Column.

PROB. II. *To proportion the Heights of the principal Parts of the* Corinthian *Pedeſtal.* Figure II. Plate IX.

Divide *o t* the given Height in 4 Parts; give the lower 1 to the Height of the Plinth; one third of the next Part to the Height of the Members on the Plinth; and half the upper 1, to the Height of the Cornice.

PROB. III. *To proportion the Height of the Members on the Plinth, and of the Cornice of the* Corinthian *Pedeſtal.* Fig. II. Plate IX.

(1.) Divide *r s* the Height in two Parts, and the two upper halves of each in 3 Parts; give the lower half of the firſt 1 Part to the Height of the Torus O, and one third of the next half to the Fillet N; give the upper two thirds of the upper half, of the upper Part, to the Caveto K, and the other third Part, being divided in three Parts, give 1 to the Fillet, and 2 to the Aſtragal L. (2.) Divide *d e* the Height of the Cornice in 3 Parts, and the upper 1 in 6 Parts; of which, give the upper 1 and one third, to the Height of the Regula A; the next two Parts and two thirds to the Height of the Cima reverſa B, and the next 1 Part to the Height of the Aſtragal C; divide the Middle Part in 2, and give the upper 1 to the Height of the Faſcia or Platband D; and the lower 1 thereof divided in 3, give the upper 1 to the Fillet E. Divide the lower 1 Part into 2 Parts, and the lower 1 Part thereof in 3 Parts; of which give the upper 1, to the Height of the Aſtragal G; half the next Part, to its Fillet; and the Remainder to the Caveto H.

PROB. IV. *To determine the Projections of the Dado, Baſe and Cornice of the* Corinthian *Pedeſtal,* Fig. II. Plate IX.

(1.) Divide *s t* the Height of the Plinth in nine Parts, and make *b a* the Projection of the Dado, equal to eight Parts. (2.) Make *y w* the Projection of the Plinth, and of the Cornice, equal to *x y* the Height of the Members on the Plinth; and at any Place againſt the Dado, as at *q*, draw the Lines *p q*, equal to *w y*; which divide in 4 Parts, and ſubdivide them again, in thirds, as exhibited; from whence determine the Projections of the Members on the Plinth, and of the Cornice, as by Inſpection is ſhewn, by the perpendicular dotted Lines proceeding from thence.

PROB. V. *To proportion the Heights of the principal Parts of the* Corinthian *Column.* Figure I. Plate IX.

Divide *d i* the given Height, into 10 Parts, and take 1 for the Diameter of the Column at its Baſe. The Height of the Baſe *h i*, is half a Diameter; and of the Capital *d f*, one Diameter and one ſixth.

PROB. VI. *To proportion the Heights of the Members of the Baſe of the* Corinthian *Column*, Fig. II. Plate IX.

(1.) Divide *m n* the given Height in three Parts, the lower 1 is the Height of the Plinth. (2.) Divide the Middle 1 in 5 Parts, and the fourth Part thereof, in 3 Parts; give the upper 1 Part thereof, to the Height of the Fillet F, the other two Parts, to the Aſtragal G; and the Remains of the Middle Part, to the Height of the lower Torus, H. (3.) Divide the upper 1 Part in 5; and the ſecond and third Parts thereof, each in 3 Parts; give the upper third Part, of the ſecond fifth Part, to the Fillet under the Aſtragal D; the next two Parts to the Aſtragal D, and the Remains upward, to the Torus C. The Height of the Aſtragal B and Cincture A, is equal to half the Height of the upper Torus, which divide in 3, and give 1 to the Cincture and 2 to the Aſtragal. The Scotia E is deſcribed at large, Fig. III. as follows. Divide the Height *a f* in 7 Parts, through the third Part, draw *d b*; make 7 *b*, equal to *f g*, and *b c* equal to *b g*; and from *c*, to the Point 7, draw the Line *c* 7 *e*. On the Point 7, deſcribe the Arch *a d e*; and on the Point *c*, the Arch *e g*, which completes the Scotia.

Note, The Scotia of the *Ionick* Baſe, is beſt deſcribed by this Method.

PROB. VII. *To determine the Projections of the Members of the Baſe of the* Corinthian *Column*, Fig. II. Plate IX.

(1.) Divide the Semidiameter in 3 Parts, and turn out 1 Part, for the Projection of the Plinth and lower Torus. (2.) Divide the Projection of the Plinth before the Upright of the Shaft, into 5 Parts; then one Part and an half terminates the Projection of the Aſtragal G, and $\frac{2}{3}$ of the next $\frac{1}{2}$ of the Fillet F. The 3d Part terminates the Fillet under the Aſtragal D, and Aſtragal B; and 3 Parts and an half, terminates the Cincture A.

PROB. VIII. *To proportion the Heights of the Members of the* Corinthian *Capital*, Plate X.

Divide *a b*, the given Height, into 7 Parts; or 70 Minutes, (each Part being ſuppoſed to be divided in 10 Parts, which are Minutes.) Then, to the Height of the firſt Range of Leaves, give 20 Minutes; to the ſecond, 40 Minutes; to the third, 50 Minutes; add up to the Abacus 60 Minutes. Divide the Height of the Abacus in 2 Parts; give the lower 1, to the Caveto *g*, one ſixth of the upper half to the Fillet *e*; and the Remains is the Height of the Ovolo *d*. The Height of the Aſtragal *b k*, is 5 Minutes, which divide in 3, give 1 to the Fillet *b*, and 2 to the Aſtragal *a*.

PROB. IX. *To determine the Projections of the Members of the* Corinthian *Capital*, Plate X.

The better to explain this Capital, I have given a Quarter Part of its Plan, in two different Manners, as I have already done of the *Ionick* Capital, *viz.* the one, of the fourth Part of a round Column; the other, of the like Part of a ſquare Column; by which the Manner and Reaſons of determining the Projections of the Members in the Profile, may the better be underſtood. To effect which, draw the Diameter of the Column at its Baſe, equally on each Side the central Line of the Capital; divide it in 60 Minutes, and continue out the ſame, 15 Minutes on each Side, as before done in the *Ionick* Order. As the Shaft of this Column is diminiſhed one ſixth of its Diameter at its Baſe, therefore from the fifth, and fifty-fifth Minutes in the Diameter, draw the Out-lines of the upper Part of the Shaft next the Aſtragal, and complete the Projection of the Aſtragal, which is 5 Minutes, and its Fillet two thirds thereof. On any Part of the central Line as at A, with a Radius equal to 25 Minutes, deſcribe a Quadrant, which divide in 4 equal Parts, and from the three inward Diviſions, draw Lines parallel to the central Line, as thoſe dotted Lines on the Left Hand Side, which are the central Lines of the Leaves. Now the Diſtances and Heights of the Leaves being thus determined; proceed next to determine the Projection of the Abacus, as follows, *viz.* Make the Projection of its Ovolo *d*, equal to 45 Minutes, its Fillet *e*, 42 Minutes and an half, and its Caveto *f*, 40 Minutes. Laſtly, From the Extream of the Abacus, to *a* the Extream of the Aſtragal draw a Line; as that dotted, which terminates, the Projection of the Leaves, in the Middle Range; and make the Projections of every other particular Part, as expreſſed by the dotted Parallels, proceeding from both Proffles, through the Scale of Minutes to the two Plans; which being very plain to Inſpection need no further Explanation. The Number of Flutes and

Fillets in the Shaft of this Column, are the ſame as thoſe in the *Ionick*.

PROB. X. *To proportion the Heights of the principal Parts of the* Corinthian *Entablature*, Plate XI.

Divide the Height *a b*, into 10 Parts, give 3 to the Architrave; 3 to the Freeze; and 4 to the Cornice.

PROB. XI. *To proportion the Heights of the Members of the* Corinthian *Architrave*, Pl. XI.

Divide *e f* the given Height in 5 Parts, and the lower 1 in 4; of which give the lower 3 to the firſt Faſcia, and the upper one, to its Bead. The ſecond Part of the Architrave's Height, is the Height of the ſecond Faſcia, and one fourth of the third Part, is the Height of its Cima. The remaining three fourths of the third Part, and three fourths of the fourth Part, is the Height of the upper Faſcia; and the next one fourth Part of its Bead. The fifth or upper Part being divided in 4 Parts, and the third Part upwards thereof divided in 3, give the upper 4th Part, and one third of the next, to the Height of the Tenia; and the remaining two thirds and 2 Parts, to the Height of the Cima reverſa.

PROB. XII. *To proportion the Heights of the Members of the* Corinthian *Cornice*, Plate XI.

(1.) Divide *c d* the given Height in 5 Parts, and the upper 1 Part in 4, of which give the upper 1 to the Regula; one third of the lower 1 to the Fillet under the Cima recta; and the Remains, to the Cima recta. (2.) Divide the 4th Part in 4; give the upper 1 to the Cima reverſa; and the lower 3 to the Corona. (3.) Divide the third Part in 4, and its upper 1 in 4; of which give the upper 1 to the Fillet, and the lower 3, to the Cima reverſa, which make the Capping of the Modillions, whoſe Depth terminates at half the firſt Part. (4.) Divide the ſecond Part in 3, and the Middle 1 thereof in 3; of which give the firſt Part to the Fillet over the Dentules, and the remaining Part upwards to the Ovolo, under the Modillions. (5.) Give half the lower 1 in the ſecond Part, to the Height of the Fillet, on which the Dentules are placed: Laſtly, The firſt Part divided in 3, the upper 1 terminates the Depth of the Dentules; the next one third, of the Middle third Part, the Depth of the Denticule; and the remaining 1 Part and two thirds is the Height of the Cima reverſa, of the Bed Mould.

PROB. XIII. *To determine the Projections of the Members in the* Corinthian *Architrave*, Plate XI.

The Projection of the Tenia, is equal to 1 fifth and one fourth of a fifth of the Architrave's whole Height. The Projection of the Tenia, divided in 5, the firſt 2, terminates the Projection of the upper Faſcia; and three fourths of the firſt Part terminates the Projection of the ſecond Faſcia.

PROB. XIV. *To determine the Projections of the Members in the* Corinthian *Cornice*, Plate XI.

The Projection of the entire Cornice, is equal to the whole Height, as expreſſed by the Arch *g k*. At any Place againſt the Freeze, as at *l*, draw a right Line, as *l m*, equal to *i k*, the whole Projection. Divide *l m* in 4 Parts, ſubdivide them again, and terminate each Member, as exhibited by the dotted perpendicular Lines which paſs through the Diviſions from the Profile to the Plan, or Planceer of the Cornice.

PROB. XV. *To deſcribe the* Corinthian *Modillion at large*, Fig. I. Plate XII.

The Breadth of a Modillion is equal to one ſixth of the Diameter, or 10 Minutes, and the Interval or Diſtance between them in a Cornice over Columns is 25 Minutes; but in a Cornice over Pilaſters, undiminiſhed, the Interval is 30 Minutes: And therefore the Diſtance between the central Lines of Modillions in the firſt, muſt be 35 Minutes, and 40 Minutes in the laſt.

As the Breadth of a Modillion in Front, as Fig. A. Plate XII. is thus determined; and as the Height and Projecture of its Profile, is determined in the laſt Problem, it therefore now only remains to ſhew, How to proportion the Parts into which they are divided, as follows:

I. *To proportion the Parts in the Front of a* Corinthian *Modillion*, Fig. A.

Divide the Breadth of the Front in 8 Parts, and give the outer 1 Part, to the Fillets as C B, *&c.* Divide the laſt half of the fourth Part, and firſt half of the fifth Part, each into 4 Parts; give the two outer 1 Parts thereof to the Fillets, and the Middle 6 Parts, to the Aſtragal A.

II. *To proportion the Parts in the Profile of the* Corinthian *Modillion*, Fig. I. Plate XII.

Divide its Height in 8 Parts, and ſet ſeven of thoſe Parts from 7 to *p*. From the third Part from *p*, draw the perpendicular Line *c e*, which interſect by a horizontal Line, drawn from 4 Parts and an half, reckon'd upwards in the Height of the Modillion; and the Point of Interſection is the Center of the Eye of the Volute, whoſe Diameter is equal to 1 Part. Within the Circle of the Eye, inſcribe a geometrical Square as in Fig. II. and therein; inſcribe another, as 4, 3, 1, 2, whoſe Diagonal divide in 4 Parts at the Points 8, 7, 5, 6. Then the Points 1, 2, 3, 4, 5, 6, 7, 8, are the Centers on which the large Volute is deſcribed. The Height *k i* of the ſmall Volute *a*, is equal to half the Height of the Modillion; which divide in 8 Parts; and then ſetting 7 of thoſe Parts from *k* to *l*, proceed in every Reſpect to deſcribe that Volute, as you did the other.

To join theſe Volutes, draw the Line *a c*; biſect it in *b*; and again at *h* and *d*; on which Points erect the Perpendiculars, *h f* and *d e* cutting the Perpendiculars *e f* and *c e* in the Points *f* and *e*, which are the Centers, on which the Curve *a b c* is deſcribed. In the ſame Manner the Under-curve is deſcribed, whoſe Center is the Point *g*.

Fig. III. repreſents the Planceer of the Modillion; whoſe Breadth is equal to that, in Front, Fig. A, and Length to the Profile, Fig. I.

Divide the Side *e* 5, Fig. III. in 5 Parts; then 1 Part, is the Breadth of the Margin, about the Coffer Fig. IV; and half of 1 Part, equal to *i h*, Fig. IV. is the Projection of the Ovolo with its Fillet, that encompaſſes the Coffer. Make *l m* equal to *l i*, and draw *m n*, which determines the Diameter of the central Enrichment; which may be, any Kind of circular Flower at Pleaſure.

PROB. XVI. *To deſcribe the Dentules at large, as in the lower left Angle of* Plate XI.

Divide the Height of the Denticule (which is the Surface againſt which the Dentules are fix'd, when made in Wood) in 8 Parts, and give 1 to the Fillet, and 6 to the Depth of the Dentules; which laſt divide in 3 Parts; and give 2 to the Breadth of a Dentule, and 1 to the Breadth of an Interval. The Depth of the Fillet, or Eye-Dentule between, is one fourth of the Depth of a Dentule.

By the ſeveral dotted parallel Lines, proceeding from the Profile to the Plan, the Conſtruction of the Plan is plain; and what has been ſaid before, concerning the Planceer of the Modillion, and Coffer in Plate XII, is herein further exemplified, by the ſeveral Planceers, and Coffers between them; of the Modillions and their Intervals in the Profile above.

V. *Of the* COMPOSITE ORDER.

PROB. I. *To proportion the Heights of the principal Parts of the* Compoſite *Order*, Fig. I. Plate XIII.

(1.) Divide *b m*, the given Height, in five Parts, and give the lower 1, *h m*, to the Height of the Pedeſtal.

(2.) Divide *b h*, the remaining 4 Parts, into 5 Parts; give *b e*, the upper 1, to the Height of the Entablature; and *e h*, the lower 4, to the Height of the Column.

PROB. II. *To proportion the Heights of the principal Parts of the* Compoſite *Pedeſtal*, Fig. II. Plate XIII.

Divide the given Height *r q* into 4 Parts; give the lower 1, to the Height of the Plinth; one third of the ſecond, to the Height of the Mouldings on the Plinth; and half the upper 1, to the Height of the Cornice.

PROB. III. *To proportion the Heights of the Members on the Plinth, and of the Cornice, of the* Compoſite *Pedeſtal*, Fig. II. Plate XIII.

(1.) Divide *e f*, the Height of the Mouldings on the Baſe, into 4 Parts: Give the lower 1 to the Torus N, and one third of the next, to the Fillet M; divide the upper 1 in 3; give the upper 2 thereof, to the Caveto I; and the other 1, to the Fillet K. The remaining one fourth Part and two thirds is the Height of the inverted Cima recta L.

(2.) Divide *c d* the Height of the Cornice in 6 Parts; give the lower 1 divided in 3, to the Caveto G and Fillet F; give the 2 next Parts to the Cima recta E and Fillet D, making the Fillet one ſixth of the Whole; give the fourth Part and half the fifth Part, to the Faſcia, or Platband C; and the remaining 1 Part and half, to the Cima reverſa B, and its Fillet A, making the Fillet one third of the Whole.

PROB. IV. *To determine the Projections of the Dado, Baſe, and Cornice of the* Compoſite *Pedeſtal,* Fig. II. Plate XIII.

The Projections of this Dado, Baſe, and Cornice, are found in the ſame Manner as thoſe of the *Corinthian* Pedeſtal, in Prob. IV. of the *Corinthian* Order.

PROB. V. *To proportion the Heights of the principal Parts of the* Compoſite *Column.*

The Proportions of theſe Parts are the very ſame as thoſe of the *Corinthian* Column, in Problem V. of the *Corinthian* Order.

PROB. VI. *To proportion the Heights of the Members of the Baſe of the* Compoſite *Column,* Fig. II. Plate XIII.

(1.) Divide *n p* the given Height in 3 Parts; the lower 1 is the Height of the Plinth I.

(2.) Divide the ſecond Part in 5; give the firſt 3, to the Torus H; the next 1, to the Aſtragal G; and half the next to its Fillet F.

(3.) Divide the upper Part in 5; give the upper 2 and an half to the Torus C, and the next half to the Fillet D, and the Remains is the Scotia E. The Height of the Aſtragal B, and Cincture A, is 1 Part and an half, turned up, as ſignified by the dotted Semicircle, divided in 3, of which, the Aſtragal is 2, and the Cincture 1.

PROB. VII. *To determine the Projections of the Members of the Baſe of the* Compoſite *Column,* Fig. II. Plate XIII.

(1.) Divide *b c*, the Semidiameter of the Column, in 3 Parts, and give 1 Part to the Projection of the Plinth, and Torus H. (2.) Divide the Projection of the Plinth before the Upright of the Column, into 5 Parts; the firſt 1 and an half, terminates the Aſtragal G; and the next half, the Fillet F. (3.) The third Part terminates the Fillet D, and Aſtragal B; and 3 Parts and an half, the Cincture A.

The Scotia at large is deſcribed by the ſame Rule as the Scotia of the *Corinthian* Baſe, in Prob. VI. of the *Corinthean* Order.

PROB. VIII. *To proportion the Heights of the Members of the* Compoſite *Capital,* Plate XIV.

The Heights of the Aſtragal, Leaves, and of the Abacus, are the ſame here, as before in the *Corinthian* Capital. The Height of the Volute *v d*, equal to 2 Parts and an half, divided in 8; give the upper half to the third Part, from *v*, to the Fillet; the fourth Part to the Aſtragal enriched with Pearls and Beads; and the next upper 2 to the Ovolo, enriched with Eggs and Darts.

PROB. IX. *To determine the Projections of the Members of the* Compoſite *Capital,* Plate XIV.

The Projections of the ſeveral Members of this Capital are the ſame as thoſe of the *Corinthian*; as alſo is the Diminution of the Shaft, and the Proportion of its Flutes and Fillets.

This Capital is compoſed of the *Ionick* and *Corinthian* Capitals; for the Abacus, Ovolo, Aſtragal, Fillet, and Volutes, are the very Members that compoſe the *Ionick* Capital; and the two Heights of the Leaves, and Aſtragal on which they ſtand, are the very ſame as thoſe in the *Corinthian* Capital.

PROB. X. *To proportion the Heights of the principal Parts of the* Compoſite *Entablature,* Plate XV.

Divide the Height *a f*, in 10 Parts; give 3, to the Architrave; 3 to the Freeze; and 4 to the Cornice.

PROB. XI. *To proportion the Heights of the Members of the* Compoſite *Architrave*, Plate XV.

Divide *e g* in 4 Parts; the lower 1, is the Height of the lower Faſcia; and one third of the next 1, of its Cima reverſa. Divide the upper 1, in 4; give the upper 1 thereof to the Height of the Fillet on the Tenia; the next 2 to the Ovolo; one third of the next 1 to the Fillet; the remaining two thirds to the Caveto, and the intermediate 1 Part and two thirds is the Height of the Faſcia next under it.

PROB. XII. *To proportion the Heights of the Members of the* Compoſite *Cornice*, Plate XV.

(1.) Divide *b c* the Height in 4 Parts, and the upper 1 Part in 4 Parts; of which give its upper 1 to the Regula E; the lower third Part of the lower 1 to the Fillet; and the intermediate Space to the Cima recta, between them.

(2.) Divide the third Part in 4; give the upper 1 to the Cima reverſa; and the lower 4 to the Corona.

(3.) Divide the ſecond Part in 3, and its upper 1 in 4; give the upper 2 to the Ovolo, and the next 1 to the Fillet, which caps the Modillions.

Half the lower third Part, is the Height of the Cima reverſa, between the upper and lower Modillions.

(4.) Divide the loweſt fourth Part of the Height, in 4; give the lower half to the Cima reverſa C; and the other half being divided in 2, give the upper 1 and two thirds of the next, to the Height of the lower Modillion.

The Height of the Aſtragal *c d* is equal to half the Height of the Cima, over them; which divide in 3; give 2 to the Aſtragal, and 1 to the Fillet.

PROB. XIII. *To determine the Projections of the Members of the* Compoſite *Architrave*, Plate XV.

The Projection of the Tenia, before the Upright of the Freeze, which ſtands over the Upright of the upper Part of the Shaft of the Column, is equal to one fourth of the Height of the whole Architrave. Divide *o p* the Projection of the Tenia, in 3 Parts; give the firſt one to the Projection of the upper Faſcia; and three fourths of the next 1, to the Projection of the Fillet over the Caveto.

PROB. XIV. *To determine the Projections of the Members of the* Compoſite *Cornice*, Plate XV.

The Projection D E of the whole Cornice, is equal to D C its entire Height. Againſt any Part of the Freeze, as at *m*, draw a Line *m n*, equal to D E, which divide in 4 Parts; ſubdivide them again, and terminate each Member, as exhibited by dotted perpendicular Lines; which paſs through the Diviſions from the Profile to the Plan, or Planceer of the Cornice.

The Breadth of the upper Modillions is one ſixth of the Diameter of the Column at its Baſe, or 10 Minutes, and the Interval between them being twice their Breadth, or 20 Minutes; therefore the central Lines of every 2 Modillions is half a Diameter, or 30 Minutes; as the Modillions are in the *Ionick* Cornice.

When the young Student hath paſſed through all the preceeding Operations, he will be enabled not only to underſtand every Part of an Order, by Inſpection, without having any Recourſe to this explanatory Part again: But will alſo underſtand the Proportions of all the following Deſigns by Inſpection, the very Inſtant that he caſts his Eye on them.

CHAP. II.

Of the Intercolumnation or proper Diſtance that the Columns of every Order are to be placed at, in the forming of Deſigns, for Frontiſpieces, Doors, Windows, *&c.*

Note, That herein I account the Diſtance or Intercolumnation, from the central Line of one Column, to the central Line of the other; and not from the Outſide of the one, to the Outſide of the other, as many Perſons have done.

I. THE Diſtance of *Tuſcan* Columns in Pairs is one Diameter 45 Minutes; but when ſingle, in Frontiſpieces, 4 Diameters; and in Arcades, they may extend from 5 to 7 Diameters, where Neceſſity requires it, making the Arch a Semi-Ellipſis, inſtead of a Semicircle; but 6 Diameters is the uſual and proper Diſtance for an Arcade.

II. The Diſtance of Columns in the *Dorick* Order, is regulated by the Number of Triglyphs that is to be between them. For as the Breadth of a Triglyph is 30 Minutes, and the Breadth of a Metope, or Diſtance between two Triglyphs is 45 Minutes, and as a Triglyph is always placed over the central Line of every Column: Therefore it follows, that to have 1 Triglyph between thoſe, over two Columns, the Diſtance muſt be 2 Diameters, 30 Minutes; that is, 60 Minutes, or 1 Diameter, for the two half Triglyphs over each Column, and the whole Triglyph between them; and 90 Minutes, or 1 Diameter and an half, for twice 45 Minutes, the Breadths of the two Metopes. So in like Manner to have two Triglyphs between, the Diſtance muſt be 3 Diameters, 45 Minutes; to have 3 Triglyphs, 5 Diameters, which *Vitruvius* calls Aræoſtyle; and to have 4 Triglyphs, 6 Diameters, 15 Minutes, which laſt is uſed in Colonades, and Arcades; and that of 5 Diameters for Doors, *&c.*

III. The Diſtance of Columns in the *Ionick* Order is regulated by the Number of Modillions, which are placed over Columns, the ſame as the Triglyphs in the *Dorick* Order. And as the Diſtance of the central Lines of *Ionick* Modillions, in a Cornice over Columns, has been ſhewn to be 30 Minutes or half a Diameter, therefore the Diſtance between Columns in this Order to have two Modillions between, which is the leaſt that can be; to have the Columns clear of each other, muſt be 1 Diameter and an half; to have 3 Modillions between, 2 Diameters and an half; to have 5 Modillions between, 3 Diameters; which laſt being doubled, is uſed in Arcades; and that of 2 Diameters and an half doubled, for Doors, *&c.*

The Diſtance of *Ionick* Pilaſters not diminiſhed, muſt be greater than of Columns, becauſe the central Lines of their Modillions, are at 35 Minutes Diſtance; and therefore it follows, that to have two Modillions between, the Diſtance muſt be 1 Diameter, 45 Minutes; to have three Modillions between, two Diameters, and 20 Minutes; to have four Modillions between, two Diameters 55 Minutes; and to have five Modillions between, 3 Diameters, 30 Minutes, *&c.*

IV. The Diſtance of Columns in the *Corinthian* Order, is alſo regulated by the Number of Modillions between them; and as in Prob. XV. of the *Corinthian* Order, the Diſtance of their central Lines are 35 Minutes, which is the ſame

Diſtance, as the Modillions in the *Ionick* Cornice over Pilaſters; therefore the Diſtances of *Corinthian* Columns muſt be the ſame as of *Ionick* Pilaſters. And as the Diſtance of the central Lines of *Corinthian* Modillions, in a Cornice over undiminiſhed Pilaſters, is alſo ſhewn in Problem XV. of the *Corinthian* Order, to be 40 Minutes; therefore it follows, That to have two Modillions between, the Diſtance muſt be two Diameters; to have three Modillions between, two Diameters, forty Minutes; to have four Modillions between, three Diameters, twenty Minutes, *&c.*

V. The Diſtance of *Compoſite* Modillions in a Cornice over Columns, is the ſame as in the *Ionick* Order; therefore the Diſtance of *Compoſite* Columns and Pilaſters are the ſame as of *Ionick* Columns and Pilaſters.

The Manner of proportioning the ſeveral Orders, and determining the proper Diſtances they are to be placed at, being thus explained; I ſhall now proceed to give ſuch Explanation of the following Plates, as will render the Buſineſs of every Deſign eaſy and delightful to every one, who has made himſelf a Maſter of the Precedent Orders.

Plate XVI, XVII, XVIII, XIX, XX.

Of PIERS *for* GATES.

To make theſe, and all other Deſigns contained in this Work, eaſy to the Underſtanding of all Capacities, and to enable ſuch, to work them, of any Magnitude required; I have to every Deſign affixed Scales of Aliquot Parts, (which never was done before by any Maſter) whereby, having only the Height of any Work to be made (which in all Caſes muſt be given;) the Whole may be performed with the utmoſt Exactneſs as required.

As for Example; Let it be required to proportion the Pier G, Plate XVI. *to any given Height.*

Divide the given Height, (ſuppoſe ten Feet) into four equal Parts (as ſignified by the Scale on its Left Side) give two thirds of the loweſt 1 Part to the Height of the Subplinth G; and two thirds of the other third Part, to the Height of the Plinth, Torus, and Fillet. Divide the upper fourth Part, in 3 Parts; and the upper 1 Part thereof in 3 Parts; of which, give the upper 2 Parts to the Height of the Capital; whoſe Members are above deſcribed at large by Fig. B. By the dotted Arch of a Quadrant in the Subplinth G, it is evident, that the Breadth of the middle projecting Part of the Pier, is equal to the Height of the Subplinth, which Breadth divide in 4; and give 1 to the Projection of each Side.

The Height of the Subplinth of the Pine Apple on the Capital, is one Part and one third, as ſignified by the dotted Semicircle: And the Height of the Pine Apple and its Pedeſtal, is determined by the Interſection of Arches deſcribed on the extream Points of the Capital's Projection, and which being divided in 3 Parts, and the lower 1 in 3, *&c.* give to every particular Member, its reſpective Height, as exhibited. The Projection of the Plinth to the Pedeſtal of the Pine Apple, is two thirds of the Projection of the Middle Part of the Pier.

Now the young Student is to obſerve, that as the conſtituent Parts of all the Deſigns in this Work, are adjuſted in the very ſame Manner as thoſe of the above Example; which, it is manifeſt, are no ſooner ſeen but underſtood; it is therefore evident, that to ſay any Thing further relating thereto, is needleſs.

Theſe five Plates contain eighteen Deſigns of Piers for Gates at Entrances into Gardens, Avenues, Courts, Palaces, *&c.* which may be built either of Stone or Brick, or of both, intermix'd, at the Pleaſure of thoſe for whom they may be erected.

Plate XXI, XXII, XXIII, XXIV, XXV.

GATES *for Entrances into Palaces*, &c.

Five Deſigns for Gates, of which the firſt, ſecond, third, and fourth, are according to the *Tuſcan*, *Dorick*, *Ionick* and *Corinthian* Orders; whoſe reſpective Imposts and Architraves of their Arches are deſcribed at large, and proportioned by Aliquot Parts, at the Bottom of each Deſign; as likewiſe is the Impoſt and Architrave to the Gate, Plate XXV. made for an Enterance to the Houſe of a private Gentleman, *&c.*

Plate XXVI, XXVII, XXVIII, XXIX, XXX, XXXI, XXXII, XXXIII, XXXIV, XXXV, XXXVI.

FRONTISPIECES *for* DOORS *to* MANSION-HOUSES, *&c.*

Theſe Eleven Plates contain twenty-two Deſigns of Frontiſpieces for Doors, of which the firſt two, Plate XXVI. are compoſed of Champher'd Ruſticks; and proper for Entrances into Buildings that have Porticoes before them, to carry off the Rains, which themſelves cannot do. The next two Deſigns, Plate XXVII. are alſo ruſticated; the one B, as the preceding; the other with ſquare Ruſticks, and being both crowned with Pediments are thereby made fit to adorn the Entrance of any Building without a Portico; as alſo, are all the Deſigns with Pediments in the following Plates. And when it happens, for Want of a proper Height, that a Pediment cannot be made; then in all ſuch Caſes the Cornice muſt break forward, and be ſupported by Truſſes, as A, Plate XXVIII, XXXI, XXXII, to carry off the Rains. It alſo very often happens, that even when Frontiſpieces may be finiſhed with Pediments, that the Projection of the Pediment will not be ſufficient to protect the Entrance from the Inſults of Rains; therefore in ſuch Caſes, the Pediments muſt advance forward, and be ſuſtained either by Truſſes, as exhibited in Plate XXX, XXXI, or by Pilaſters, or Columns, as in Plate XXXIII, XXXIV, XXXV, XXXVI.

As I have finiſhed the greateſt Part of theſe Deſigns with Pediments of all the Varieties of the Orders, I ſhall in the next Place ſhew

How to find the different Curvatures of Raking Mouldings of Pediments, and Modillions, Plate XXXVII.

(1.) Let *t l*, *v b*, be the upper Fillet or Regula, and *w c*, *x o*, the lower Fillet, of a level Cima Recta of a Cornice; alſo *k l*, *g b* be the Raking Regula, or upper Fillet; and *i c*, *m z* the lower Fillet of the Raking Cima Recta, and let *a b c*, be the Level Cima Recta given, whoſe Heights is *a c*, and Projection *a b*. Divide *a c* into any Number of equal Parts, ſuppoſe 8, and draw the Ordinates 1 *p*, 2 *p*, 3 *p*, *&c.*

(2.) On any Part of *g b*, as at *e*, raiſe a Perpendicular, as *e f*, to the Height of the Raking Cima, which divide in the ſame Number of equal Part as *a c*, as at the Points 1, 2, 3, *&c.* from which draw Ordinates 1 *p*, 2 *p*, 3 *p*, *&c.* each reſpectively equal to the Ordinates in the Cima A, and then tracing the Curve *d p p*, *&c. f*, it will be the true Curve of the Raking Cima.

(3.) *Suppoſe the Point g*, Fig. C, *to be the utmoſt Point of Projection, in the Return of the Raking Cima, in an open Pediment.*

Draw *g h* parallel to *w c*, and from *b* draw the Perpendicular *b i*, which divide in eight equal Parts at the Points 1 2 3, from whence draw the Ordinates 1 *p*, 2 *p*, 3 *p*, *&c.* equal to the Ordinates 1 *p*, 2 *p*, 3 *p*, *&c.* in Fig. A. From the Point *g*, through the Points *p p p*, *&c.* trace the Curve *g p p*, *&c. i*, which is the true Curve of the returned Cima, as required.

Fig. D E F is a ſecond Example of an Ovolo, wherein the three ſeveral Heights are all equally divided into the ſame Number of Parts, and the Ordinates of every one are reſpectively equal.

Now what is here ſaid with Reſpect to the Raking Members of a Pediment, is to be alſo underſtood of the Members of Raking Modillions. For if Fig. E, or Fig. B, be conſider'd as the Front Moulding, then the Figures F and D, or C and A, are the Moulds or Curvatures of the two returned Mouldings.

For this excellent Method I am greatly oblig'd to the ingenious Mr. ROBERT HARTWELL, at the Tower of *London*, Carpenter.

Plate XXXVIII.

To deſcribe the Curvature of a Truſs, for the Support of a Cornice, &c.

(1.) Divide the given Height into eleven equal Parts; divide the upper three Parts in ſeven Parts, and make *n e* the perpendicular Line of the Projection of the upper Volute to eight of thoſe Parts: Alſo, divide the third and fourth Parts of its Height in ſeven Parts; and make the Projection of the lower Volute equal to eight of thoſe Parts.

(2.) This done, proceed in every Particular to deſcribe the two Volutes, and the Curve *e c g*, as directed in Sect. II. Prob. XV. of the *Corinthian* Order, to deſcribe the Volutes or Scrolls of the *Corinthian* Modillion. Fig. B. repreſents the Eye of a Volute, with its Centers at large; and Fig. A, the Face or Front of a Truſs; which divide in eight Parts, give the outer ones to the two Fillets; the middle one, to the Aſtragal, and its Fillets; and the Remainders on each Side, to the two Cima Recta's.

Plate XXXIX, XL.

Of Attick Windows, *whoſe Diameter and Heights are equal.*

Theſe two Plates contain ten Windows, for *Attick* Stories, which are differently adorned, the firſt two having Window Stools, the one with plain Brick Work, the other with an Architrave expreſſed at large, by Fig. G, whoſe Breadth is equal to one ſixth of the Window. The other eight are alſo adorned with Architraves, ſquare and knee'd, entire and broken, or interſperſed with Ruſtick Blocks, on Stools, ſupported by Truſſes, of which Fig. C, D, E, F are four Varieties.

Plate XLI.

Of Windows *whoſe Heights are equal to the Diagonal of a geometrical Square, whoſe Side is equal to the Diameter of the Window.*

This Plate contains four Deſigns, *viz.* two ſquare-headed, proper for an *Attick* Story, alſo one ſemi-circular, and one ſemi-elliptical headed, for Chambers next under them.

Plate XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII.

Of Windows for State Rooms, and their Enrichments.

As theſe Sort of Windows are ſometimes enriched with an Entablature, and plain Architrave only, as thoſe in Plate XLV, XLVI; or have their Architraves interſperſed with Ruſticks, as A, Plate XLIV, *&c.* I have therefore, precedent to them, given three Varieties of Entablatures, fit to be placed over Windows, *viz.* Fig. A, B, Plate XLII, and B, Plate XLIII, as alſo, for Variety Sake, the Block Cornice A, which when practiſed, muſt be placed on Camphered Ruſticks, as in B, Plate XLVI. Plate XLVII contains a *Dorick* and *Tuſcan* Window, the firſt with Columns, the other with Pilaſters, (whoſe Flutings I ſhall preſently ſhew, How to deſcribe.) Plate XLIX contains an *Ionick* and *Corinthian*; and Plate L, two *Compoſite* Windows, which ſix laſt are of all others the moſt magnificent that can be made, except thoſe which are called *Venetian* Windows, of which I have given three Varieties, *viz.* *Tuſcan*, *Dorick*, and *Ionick*, in Plate LI, LII, LIII, and which are moſt proper for a grand Stair-Caſe, Saloon, Library, Chancel of a Church, *&c.* where much Light is required; or for a Dining Room, *&c.* whence fine Views may be ſeen.

Plate LIV.

Of circular and elliptical Windows.

This Plate contains five Varieties of circular Windows, and one ovalar, differently adorned with Architraves and Ruſticks; which are proper for *Attick* Stories, or in Tympanums of Pediments, *&c.*

To deſcribe an Oval Window of any Breadth and Height, this is the Rule.

Draw the two Diameters at right Angles, each of their aſſigned Length. Set half the ſhort Diameter from *f* the End of the long Diameter to *k*, and divide the Remains of the Center *h*, in three equal Parts, and ſet one Part from *k* to *i*. Make *h g* equal to *h i*, and complete the two equilateral Triangles *g a i*, and *g n i*. On the Centers *g* and *i*, with the Opening *i f*, deſcribe the Arches *d f m* and *l e 7*, and on the Centers *a n* with the Opening *a m*, deſcribe the Arches *m o l*, and *7 b d*, which completes the Oval, as required.

Plate XLVIII.

To deſcribe the Flutes and Fillets of Pilaſters, and to repreſent the perſpective Appearances of Flutes and Fillets of Columns.

EXAMPLE I. *To divide the Flutes and Fillets of any Pilaſter,* Fig. A.

Draw a Line at Pleaſure, as *b l*, and therein ſet 29 equal Parts of any Magnitude at Pleaſure, and complete the equilateral Triangle A *b l*, ſet the given Breadth of the Pilaſter, ſuppoſe *i k*, from A, to *i*, and from A to *k*, then drawing Lines from A to the firſt one, the next three, the next one, the next three, *&c.* in the Line *b l*, they will divide the Line *i k* into its Flutes and Fillets, as required.

EXAMP. II. *To divide the Flutes and Fillets with Beads at the Angles, of any Pilaſter, as* Fig. B.

Draw a Line as *m p* at Pleaſure, and therein ſet 31 Parts as before, and then completing the equilateral Triangle B *m p*, proceed in every Reſpect, as in the preceding Example. And here note, That when the Lines repreſenting the Flutes and Fillets of a Pilaſter are thus drawn, on a Draught Board, *&c.* from thoſe Lines, the Flutes and Fillets of all other Pilaſters of greater Diameter may be readily found. As for Example: Suppoſe the Lines *b f* and *a d*, Fig. A, were the Diameters of two other Pilaſters. On any Point, in any Side, ſuppoſe on *b*, with an Opening equal to *b f*, deſcribe the Arch *g e*, cutting the Side of the Pilaſter in *f*; then draw the Line *b f*, the ſeveral Flutes and Fillets firſt drawn, will divide that Line in the ſame Proportion; and ſo the Line *a d* the Diameter of the leſſer Pilaſter.

The Lines *r t* and *q s*, Fig. B, expreſs the ſame, in that Pilaſter which hath Beads at its Angles.

To repreſent the perſpective Appearances of Flutes and Fillets in the Shafts of Columns, Fig. C, D.

By Prob. XI. of the *Ionick* Order, deſcribe the Flutes and Fillets in each Semicircle *a g c*, and *c b d*, from whence draw perpendicular Lines, which terminate with Arches, as *x x x*, *&c.* and the Whole will be completed, as required.

Plate LV, LVI, LVII.

Of NICHES.

Theſe three Plates contain ſix grand Deſigns for Niches, of the *Tuſcan*, *Dorick*, *Ionick*, *Corinthian*, and *Compoſite* Orders, whoſe Cavities, though here repreſented ſemicircular, may be made ſemielliptical at Pleaſure, when required; and as the working of the Heads of Niches, ſemicircular, ſemielliptical, may be performed two different Ways, which are very curious, I ſhall therefore now explain thoſe Operations as follows:

Plate XVIII, Fig. K.

To form the Head of a ſemicircular and ſemielliptical Nich, by divers Thickneſſes of Plank, &c. *glew'd together.*

(1.) On the Surface of a flat Pannel, *&c.* large enough to contain ſomething more than the Plan of the Nich, deſcribe a Semicircle, as 1 2 3, *&c.* 14, 5 *d*, Fig. K, of the ſame Diameter, as that of the Nich. Take the Thickneſs of your Plank, *&c.* in your Compaſſes; and ſet that Diſtance on the Semidiameter *a a*, from *a* to *c*, from *c* to *e*, *&c.* and through the Points *c e g i*, &c. draw Lines parallel to the Diameter 1 *a d*. Take a Piece of Plank, as Fig. A, and with a Square, applied to its Edge about the Middle of its Length, as at *a*; draw a Line, from the under to the upper Surface; the Extreams of which are two Centers; on which you are to deſcribe two Semicircles; the under one with the Radius *a* 1; the upper one with the Radius *c* 2. With a turning Saw cut obliquely through the two Semicircles; and then you will have done the firſt Thickneſs. Take a ſecond Piece of Plank, as Fig. B; draw a Line on its Edge near its Middle, ſquare to both Surfaces; whoſe Extreams are two Centers as before. On the under Center thereof, with the (laſt) Radius, *c* 2, deſcribe a Semicircle equal to the laſt (becauſe the under Surface of this ſecond Piece, is to be glew'd on the upper Surface of the firſt) and on its upper Center, with the Radius *e* 3, deſcribe a Semicircle on the upper Surface; then cutting through both Pieces as before, the ſecond Piece is done.

(2.) Proceed in like Manner until the Whole is complete; the Operations of which are expreſſed by the ſeveral Semicircles 3, 3: 4, 4: 5, 5: *&c.* in the Figures C, D, E, F, G, H, I, K, L, M, N, O, which repreſent the ſeveral Pieces of Plank as their reſpective Heights above the Baſe 1 *a d* approach the Zenith of the Nich.

(3.) Glew all theſe Thickneſſes, one on the other; and with a Compaſs, ſmoothing Plain, whoſe Arch is ſomething quicker than that of the Nich, clear off and finiſh the Inſide.

An

(4.) An elliptical headed Nich may be formed in the ſame Manner, as the preceding; if Semi-Ellipſiſſes are deſcribed on the Surfaces of the Thickneſſes; as the Semicircles aforeſaid.

To find the long Diameter of the ſeveral Semi-Ellipſiſſes.

As they diminiſh from the Baſe of the Nich to its Zenith; deſcribe an Ellipſis equal to the Plan, or Face of the Nich; divide its Height into Thickneſſes, and drawing Lines through the ſeveral Points of Diviſions, parallel to its longeſt Diameter, until they meet the Curve of the Front, in the ſame Manner, as in the preceding Fig. K; they will be the long Diameters required.

To find their reſpective ſemi-ſhort Diameters.

Deſcribe a Quadrant, whoſe Radius is equal to the Height of the ſemi-elliptical Head of the Nich. Divide one of its Sides, into the ſame Number of Parts, as the Number of Thickneſſes in the Height. From thoſe Parts or Diviſions, draw Ordinates to the Limb; which are the ſemi-ſhort Diameters, reſpectively proportionate to the long Diameters before found.

The Heads of Niches are ſometimes formed by Ribs, as Fig. IV, where A is the Plan, and B the Elevation of the Ribs, for a ſemi-circular headed Nich.

The Mould by which theſe Ribs are made, is the Arch of a Quadrant, *a b*, Fig. III; or the Arch *a b*, the half Front of Fig. B. When the Heads of Niches are thus formed, they are either lathed or plaiſtered within Side, or lined with thin Deal or Wainſcot; which laſt, if performed in a neat Manner, has a very good Effect, and may be thus performed.

To cut out the Lining for the Head of a ſemicircular Nich. Fig. I. Plate LVIII.

Let the Semicircle *b* 4 8, repreſent the Plan of the Head of a ſemicircular headed Nich, which divide in 16 Parts, and through every other Part draw the Lines A z, B z, C z, &c. making their Lengths B *a*, &c. equal to the Length of the Arch *b* 4; or half the Circumference of the Nich's Head.

Complete the Circle 1 6 *b*, 4 *p*, and draw the Diameter 4, 16, at right Angles to the Diameter *b z* 8. Divide the Semidiameter *z* 16, in eight Parts, and through them draw the Lines *b p*, *i q*, *k r*, &c. and on the Points 9, 10, 11, &c. with the Radius 9 *p*; 10 *q*; 11 *r*; &c. deſcribe Semicircles, as *o g* 10 *w*; *n f z v*, &c. and divide a fourth Part of each, as *g* 10; *f z*, &c. into 4 equal Parts. On the Point G, with a Radius equal to the Length of the Arch *o* 16, or 16 *w*, deſcribe the Arch *a* 17 *b*, alſo with Radius's the Lengths of the Arches 16 *n*; 16 *m*; 16 *l*; 16 *k*; 16 *i*; 16 *b*; deſcribe the Arches *d* 18 *c*; *e* 19 *f*; *b* 20 *g*; *k* 21 *i*, &c. On the Arches *a b*, *d c*, *e f*, &c. ſet off one fourth Part of the Arches *g* 10, *f z*, &c. from the Points 17, 18, 19, &c. to the Points *a b*; *d c*; *e f*; *b g*; *k i*; &c. through which, Lines being traced, from the Point G, to the Points 6 and 7; the Part G 6 7. will be an eighth Part compleated. In the ſame Manner complete the other 7 Parts, A B C, &c. and when bent into their Places, they will exactly complete the Lining of the Head of the Nich, as required.

Note, In very large Niches, the Number of Parts may be encreaſed from 8 to 12, 16, 20, &c. at Pleaſure.

Fig. II. is the Plan of the Head of a ſemi-elliptical Nich, compoſed of Ribs for Lath and Plaiſter, whoſe Baſes are repreſented by *a b c d e f*. The Front of this Nich, is the very ſame Semi-Ellipſis, as the Plan *a f g*. But the ſeveral Ribs, which ſtand on the Plan to form the Head, are different, as being all Quarter Parts of Ellipſiſſes whoſe longeſt Diameters are leſs; excepting the Front Rib, that ſtands over the Baſe *f b*, which is the fourth Part of a Circle, whoſe Radius is *f b*.

To form the Curves of the Ribs, to ſtand on the Parts *b c d e*, conſider their Baſes *b b*, *c b*, *d b*, and *e b*, as half the long Diameters of ſo many Ovals, and *f b* is half the ſhort Diameter to every one of them in general. Then by the Rule given in Plate LIV, to deſcribe an ovalar Window of any Breadth and Height; deſcribe the Curves for the ſeveral Ribs required; which are no more than the Quarter Parts of ſo many complete Ovals.

Plate LIX, LX.

Eight Deſigns for Marble Ciſterns, for Buffets, Side Board Tables, &c.

Plate LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII,LXXVIII,LXXIX,LXXX,LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI,LXXXVII,LXXXVIII,LXXXIX, XC, XCI, XCII, XCIII.

Of Chimney Pieces, *and their Enrichments.*

In theſe thirty-three Plates, there are ſixty-three of the beſt Deſigns for Chimney Pieces, and their Ornaments (containing great Variety of Tabernacle Frames, Shields, Feſtoons, *&c.*) that have been yet publiſhed by any one Maſter in *Europe*, if not in the whole World.

Plate XCIV, XCV, XCVI, XCVII, XCVIII, XCIX, C, CI, CII, CIII, CIV, CV.

Of Pavements, Frets, *and* Gulochi's.

Twenty-ſeven Deſigns of Marble Pavements, for Halls, Baths, *&c.* the laſt nine of which are inviron'd with thirty-ſix Varieties of Frets, Gulochi's and Borders, which in general may be as well applied for Borders to Pavements, as to enrich the Planceers of Architraves, or other Ornamental Parts of Architecture, wherein they are commonly introduced, and more particularly ſuch that may be view'd from a Gallery.

Plate CVI, CVII, CVIII, CIX, CX, CXI.

Of Altar Pieces.

Six Altar Pieces, of which the firſt two are for Chapels, and the others for Churches.

Plate CXII, CXIII, CXIV, CXV, CXVI, CXVII.

Of Pulpits.

Six Deſigns for Pulpits, which in general have their Plans, Types and Members repreſented at large; which the ingenious Workman may perform with Pleaſure.

Plate CXVIII, CXIX, CXX, CXXI, CXXII.

Tables *for* Monumental Inſcriptions.

Twenty-two Deſigns for Tables of Renown, for perpetuating to Poſterity the Memoirs of worthy Perſons deceaſed.

Plate CXXIII, CXXIV, CXXV, CXXVI, CXXVII,CXXVIII,CXXIX,CXXX,CXXXI, CXXXII, CXXXIII, CXXXIV, CXXXV, CXXXVI.

Of Monuments.

Twenty-one Deſigns for Monuments, enriched with Vaſes, Baſs-Relievo's, Buſto's, *&c.* from which the ingenious Workman may receive ſuch Hints, as to invent others innumerable.

Plate CXXXVII. *Of* Tombs.

Here, for Variety Sake, I have given a Plan, and two Elevations, by which 'tis evident, that theſe Kinds of Tombs are nothing more than regular Pedeſtals, crowned with large Tables for Inſcriptions.

To make theſe Tombs truly grand, they ſhould be aſcended by three Steps, giving to the upper Step a Breadth, at leaſt double that of the others.

In Plate CXXXII is ſhewn, how much an Object appears leſs, as 'tis elevated above the Eye. Suppoſe the Object D, whoſe lower Part is level with the Eye *k*, be raiſed from *a* to *c*; then its real Height *c d*, will appear to the Eye at *k*, to be no higher than *f g*; becauſe *k g* and *k a* are equal; and *f g* is ſeen under the ſame Angles as *d c*.

To make a Monument, *&c.* placed on the Point *c*, appear of equal Height, with a Monument view'd level with the Eye as D; draw the Lines 10 *k*; 5 *k*; and *c k*. On the Point *k* with any Radius, deſcribe an Arch as *x x z z* at Pleaſure. Make the Arch *x z*, equal to the Arch *z z*, and from *k* through the upper *x*, draw the Line *k x b e*; then the Height *e c*, equal to eight Feet is the Height required, at fifteen Feet above the Eye; that ſhall appear equal to five Feet, view'd level with the Eye. For as the Angle *e k c*, is equal to the Angle 10 *k* 5; and as *e c* is perpendicular over *a b*, therefore the Height *e c*, though three Feet more than *a b*, will appear to the Eye at *k* to be but of the ſame Height of *a b*, *viz.* five Feet.

As very often it is required to erect Monuments in Churches, at ſome conſiderable Heights above the Eye; I therefore, for the Sake of *Maſons*, thought it neceſſary to demonſtrate the preceding, that they might avoid Errors in proportioning ſuch Works for the future.

Plate CXXXVIII. *Of* Obeliſques.

Here I have given four Varieties of Obeliſques, *viz.* Fig. A. whoſe Baſe is a geometrical Square; Fig. B. an equilateral Triangle; Fig. C. an Octagon; and Fig. D. a Circle.

Plate CXXXIX, CXL. *Of* Time Pieces.

Two Time Pieces for the Inſide of Churches; as againſt a Gallery, *&c.*

Plate CXLI, CXLII, CXLIII, CXLIV, CXLV, CXLVI, CXLVII.

Frames *for* Marble Tables *in Rooms of State*, &c.

Ten Deſigns for the Feet and Frames of Marble Tables, after the *French* Manner.

Plate CXLVIII, CXLIX.

Of Marble *and* Stone Tables *for* Grotto's *and* Arbors *in Gardens.*

Here are four Varieties of Tables, and as many of their Pedeſtals, whoſe Plans explain the Figures to be circular, octangular, hexangular and ſquare.

Plate CL.

Of Chriſtening Fonts *for Churches, and their Pedeſtals.*

Four Fonts for the Baptiſm of Children in Churches, which to be grand, ſhould be erected on a ſpacious Aſcent of three Steps, that thereby, during the Performance of Baptiſm, the Prieſt may be elevated above the Congregation.

Plate CLI, CLII.

Pedeſtals *for* Sun-Dials, *and* Buſto's.

The firſt ſix Pedeſtals are deſigned for Horizontal Sun-Dials, which, when erected, ſhould be elevated about three Steps from the Ground; whereby they will be leſs liable to be diſplaced by Accident, and thereby rendered uſeleſs. The laſt four Pedeſtals are deſigned for Buſto's, placed in Buildings or Gardens.

Plate CLIII, CLIV, CLV, CLVI.

A Cheſt of Drawers, a Medal Caſe, a Cabinet of Drawers, and a Dreſſing Table enriched after the *French* Manner.

Plate CLVII, CLVIII, CLIX, CLX, CLXI, CLXII, CLXIII, CLXIV.

Eight Deſigns for Book Caſes.

Plate CLXV, CLXVI, CLXVII, CLXVIII, CLXIX, CLXX, CLXXI, CLXXII, CLXXIII, CLXXIV, CLXXV, CLXXVI, CLXXVII, CLXXVIII.

Fourteen Deſigns for Cielings, with great Variety of Enrichments; wherein is contained, for the Uſe of *Carpenters*, the Manner of forming Angle Brackets, for a Plaiſter Cove of a Cornice, as follows:

I. *To form the Curve of the Angle Bracket* A, *for a Plaiſter Cove,* Plate CLXV.

Let B be a front Bracket, ſtanding at the Angle *a*, whoſe Projection is equal to *a c*; and when up in its Place will ſtand over the Line *a c*; for which Reaſon I call it, the Baſe of that Bracket. Draw *a b*, the Baſe of the Angle Bracket, and divide *a c* and *a b*; the two Baſes, each in the ſame Number of equal Parts, ſuppoſe, 6, 8, 10, *&c.* as at the Points 1, 3, 5, *&c.* From the Points 1, 3, 5, *&c.* draw Ordinates, perpendicular to the two Baſes, as *c f*; 1, 2; 3, 4; 5, 6; *&c.* and make the Ordinates 1, 2; 3, 4; 5, 6; *&c.* on *a b* the Baſe of the Angle Bracket, equal to the Ordinates 1, 2; 3, 4; 5, 6; *&c.* on *a c*, the Baſe of the front Bracket. Then fixing Nails in the Points *g* 2 4 6, *&c.* to *a*; bend a thin Lath of equal Thickneſs to them, and trace the Curve *g* 2 4 6, *&c. a*, which is the Curve of the Angle Bracket, for the Cove as required.

II. *To form an Angle Bracket for a Plaiſter Cornice,* Fig. A. Plate CLXVIII.

Let *b f h a*, be a front Bracket, *d a* its Height; *d b* its Projection, and the Line *e a* its Baſe, when erected in its Place, at the Angle *a*. Draw *n a*, the Baſe of the Angle Bracket, and raiſe the Perpendiculars *a*, *s*; and *n*, *r*; each equal to *d a* the Height of the front Bracket. From the Points *f* and *h*, draw down the Lines *f i*, *h k*, and continue them to *m l*. Draw *m q*, and *l o*, parallel to *n r*. Make *l o* equal to *k h*; and *m q* equal to *i f*. Then drawing the Lines *a o*, *o p*, *p q*, and *q r*, the Angle Bracket will be finiſhed, as required.

Note, That a Bracket for an external Angle has no Difference from a Bracket for an internal Angle, the *Backing* only excepted; the Back of the former having its Angle convex; and the latter (if ſtrictly performed, which is ſeldom done) concave to its central Line. And what is here ſaid for finding the Curve or Form of a Bracket at a right Angle; is to be alſo obſerved and practiſed for finding the Curve or Form of a Bracket at any acute or obtuſe Angle whatſoever, after having found the Baſe Lines of the Front and Angle, over which the two Brackets are to ſtand, when in their Places, as *e a*, and *n a*, in the laſt Example.

Plate CLXXIX, CLXXX, CLXXXI, CLXXXII, CLXXXIII, CLXXXIV, CLXXXV, CLXXXVI.

Twenty-two Deſigns for Iron Works of the moſt exquiſite Taſte, from which many curious Enrichments may be compoſed, for the Embelliſhments of Cabinet Works, Cielings, *&c.*

In Plate CLXXIX, Fig. A contains four Varieties of Pannelling for Balconies; and Figures B and C are two Varieties for ſquare Pannels to Gates, *&c.*

In Plate CLXXX is four Varieties of Raking Pannels for Stair Caſes; and in Plate CLXXXII is three other Varieties for the ſame Uſe.

Plate CLXXXI contains five Varieties of pannelling for Iron Gates; and Plates CLXXXIII, CLXXXIV, CLXXXV, CLXXXVI, four grand Deſigns for Iron Piers, with their Gates and Ornaments.

ADDENDA, of Fourteen Plates of ROOFS, *&c.*

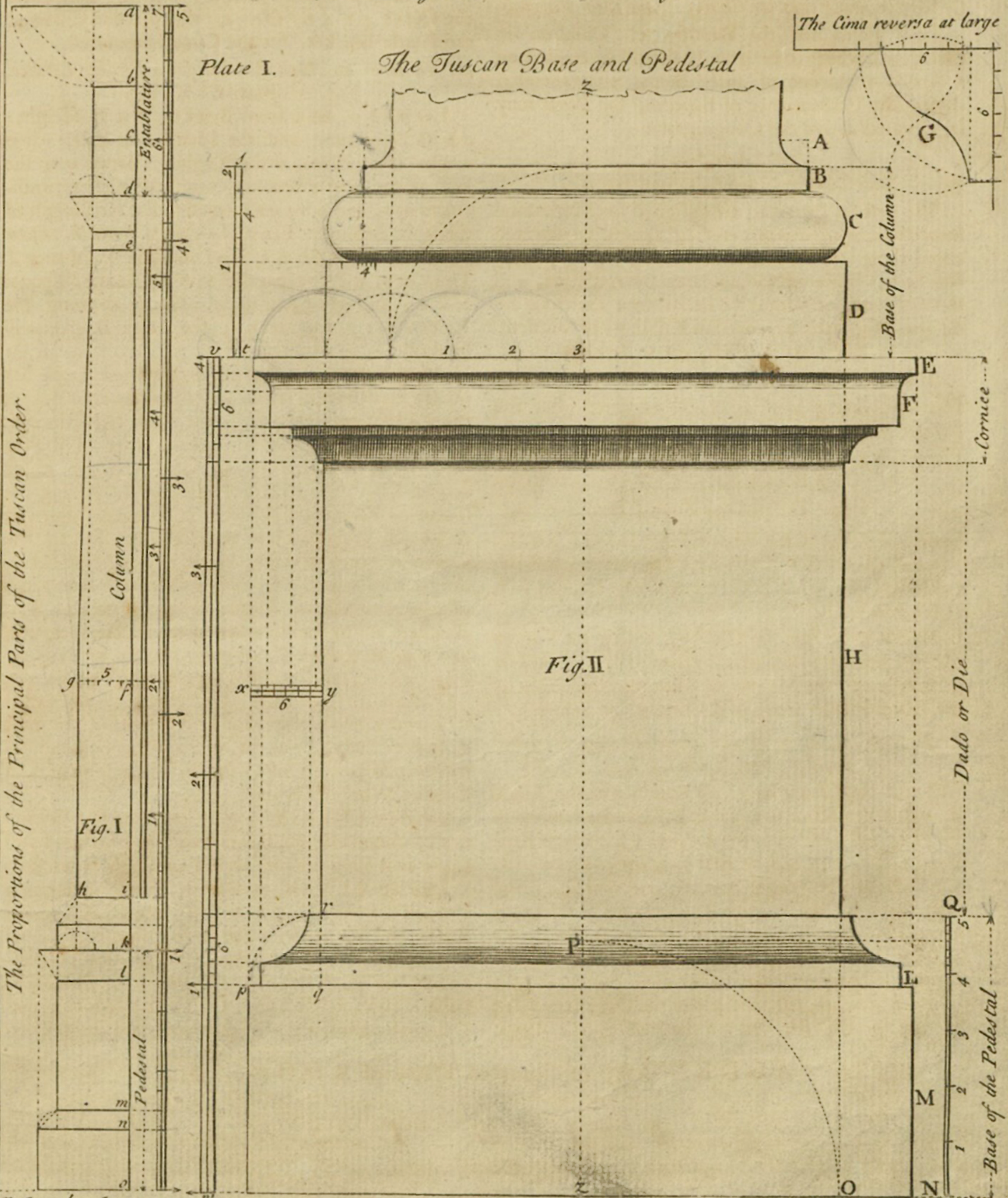
FINIS.

Introduction

Before the young Student can proceed to the Art of making Deſigns of the Ornamental Parts of Buildings. He muſt underſtand, How to Proportion the five orders of Columns; and that this Work may not be dependant on any other for that Purpoſe; I ſhall therefore firſt Explain, the manner of Proportioning them at large by equal Parts in a more Conciſe, but full and eaſy Manner than has been yet done.

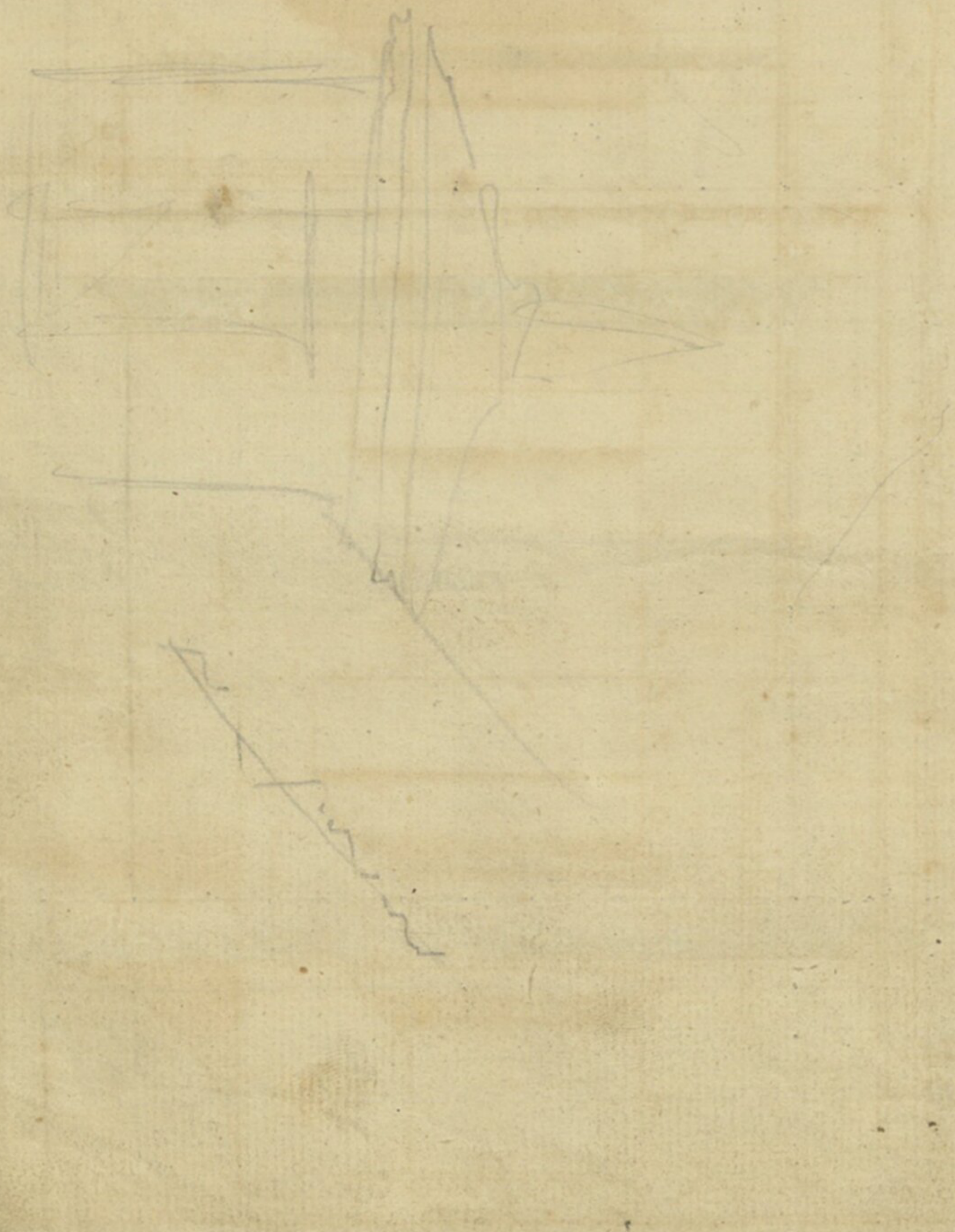
Plate I.

The Tuſcan Baſe and Pedeſtal


The Proportions of the Principal Parts of the Tuſcan Order.
Fig. I
Column
Entablature
Pedeſtal
a
b
c
d
e
f
g
h
i
k
l
m
n
o
1
2
3
4
5
6
7
Fig. II
The Cima reverſa at large
G
A
B
C
D
E
F
H
L
M
N
O
P
Q
r
s
t
v
x
y
z
w
Base of the Column
Cornice
Dado or Die
Baſe of the Pedeſtal

B. Langley Invent 1738.

Thos. Langley Delin. & Sculp.



The Tuscan Entablature and Capital.

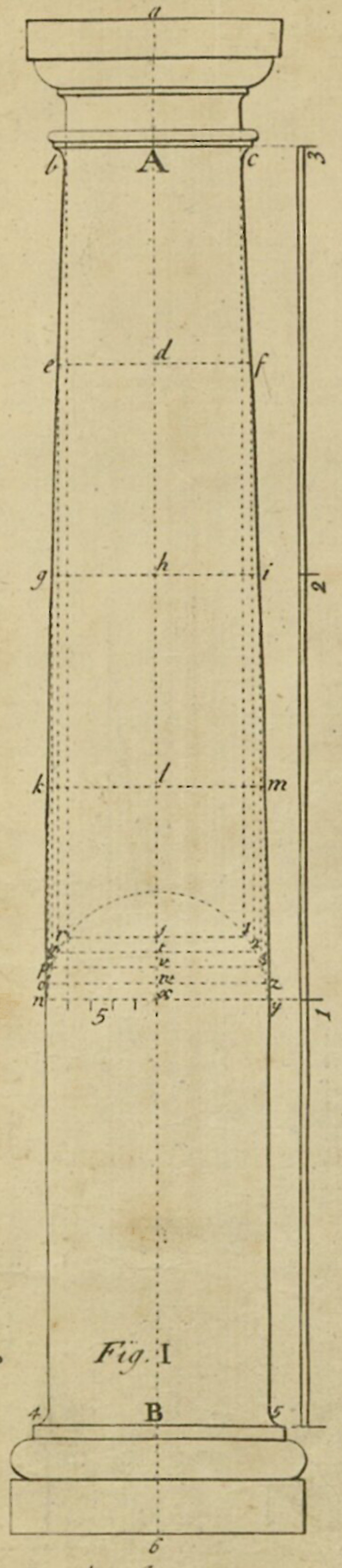
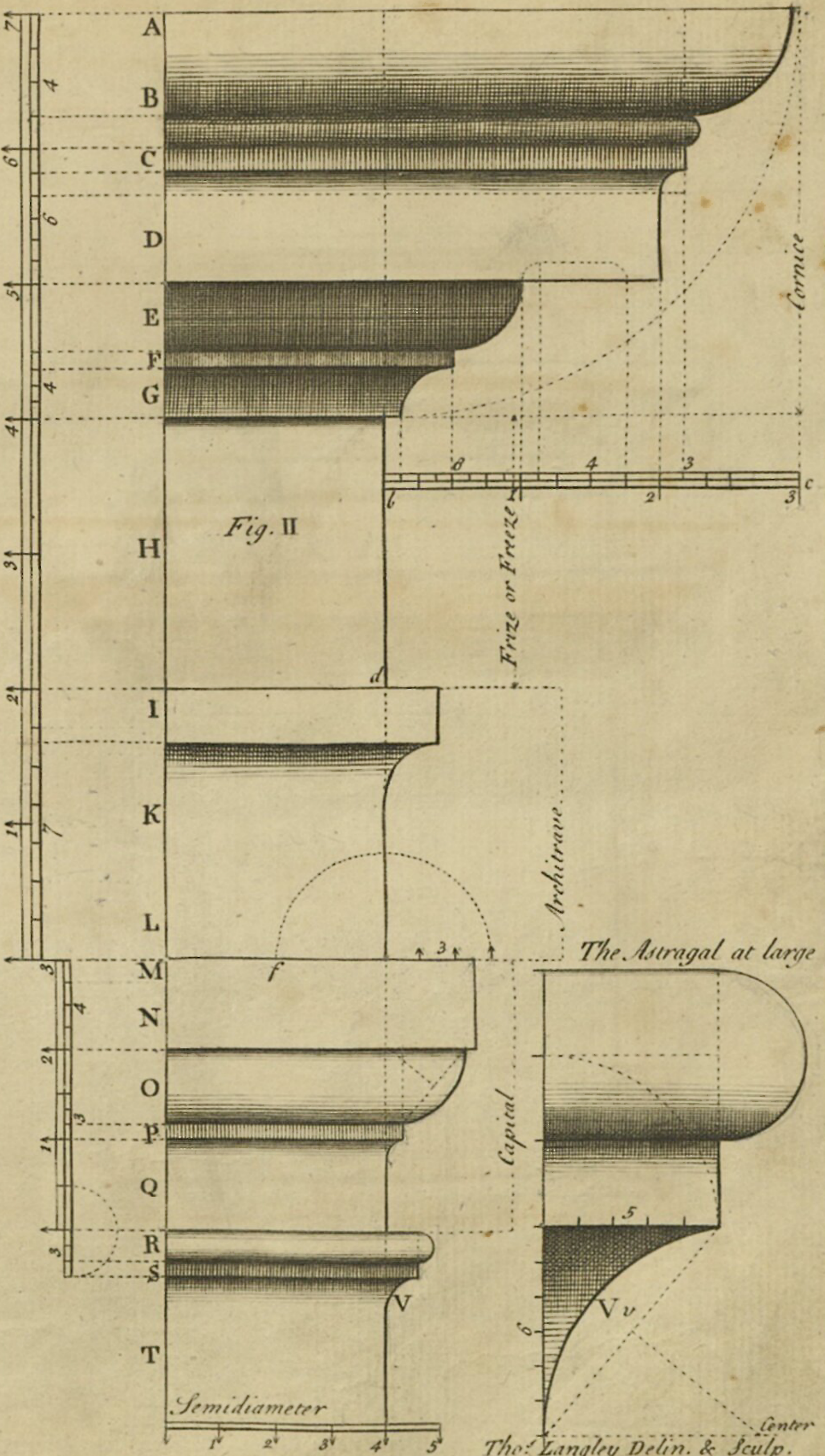

a
A
b
c
3
d
e
f
g
h
i
2
k
l
m
n
5
y
1
4
B
5
6

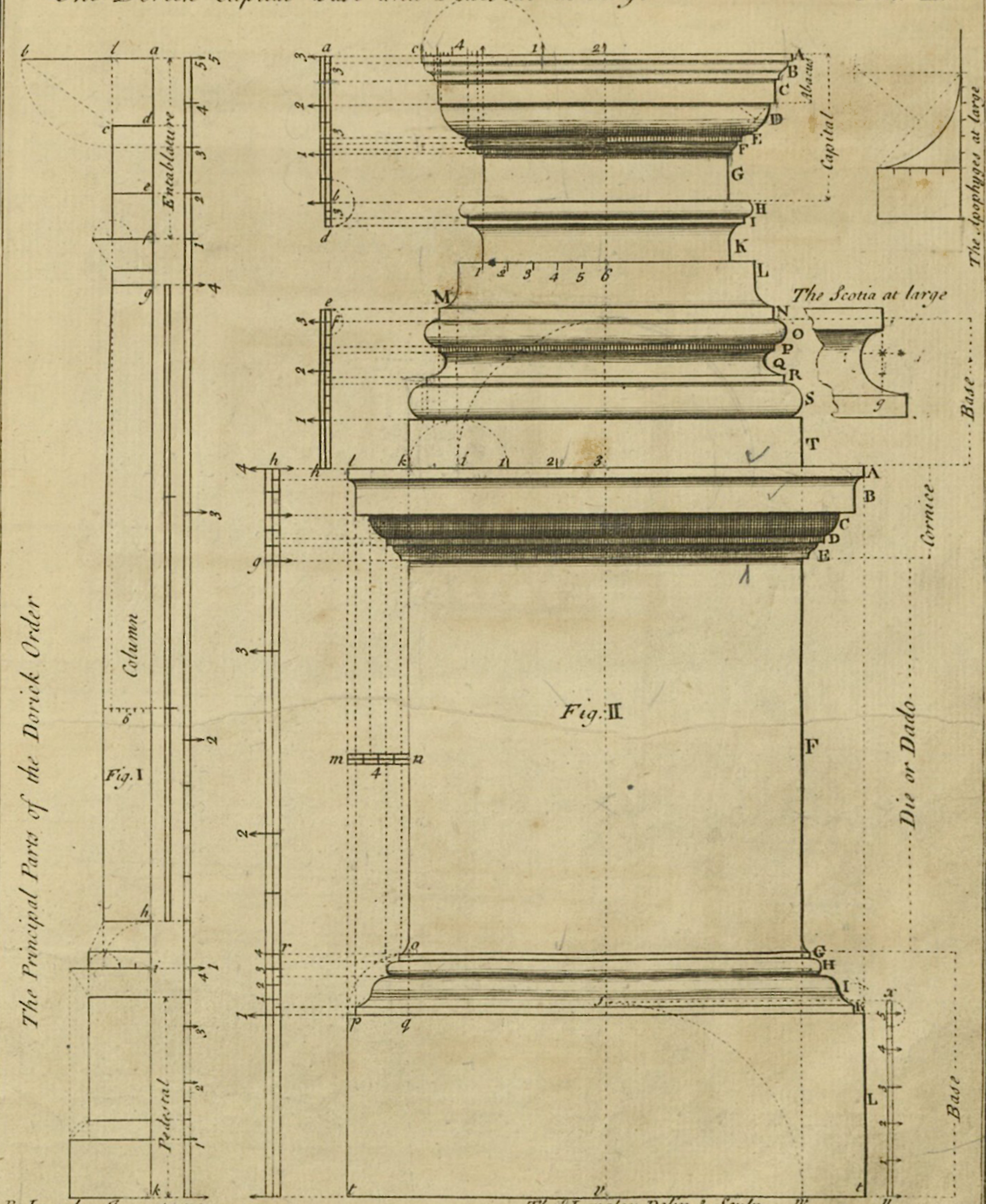
Fig. I


A
B
C
D
E
F
G
H
I
K
L
M
N
O
P
Q
R
S
T
V
Fig. II
Cornice
Frize or Freeze
Architrave
Capital
The Astragal at large
Vv
Center
Semidiameter
1
2
3
4
5
b
c
d
f

B. Langley Invent 1738.

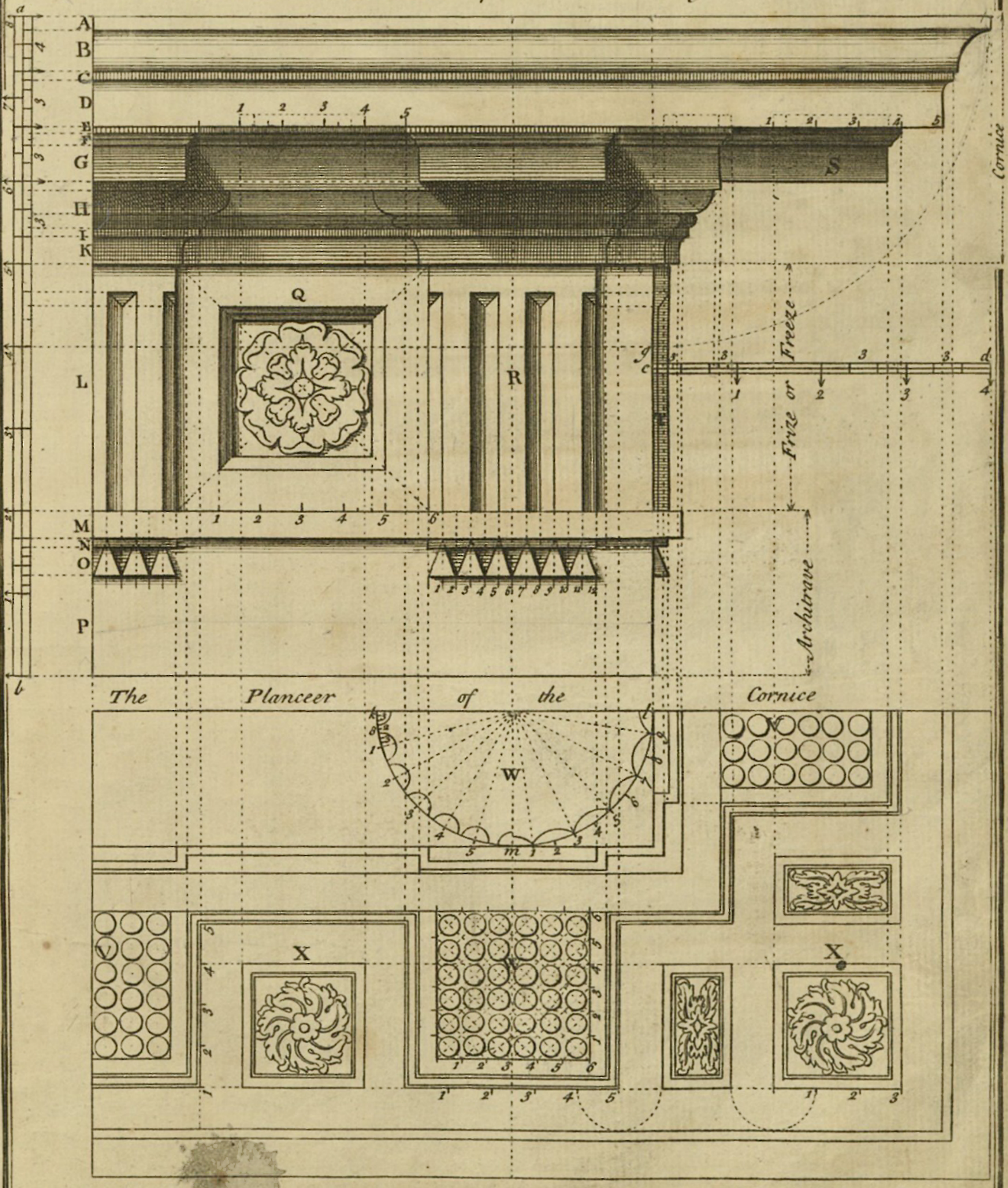
Thos. Langley Delin. & Sculp.

The Dorick Capital Base and Pedestal at large *Plate* III.


The Principal Parts of the Dorick Order
Entablature
Column
Fig. I
Pedestal
Capital
Abacus
Base
Cornice
Die or Dado
Base
Fig. II
The Scotia at large
The Apophyges at large
A
B
C
D
E
F
G
H
I
K
L
M
N
O
P
Q
R
S
T
a
b
c
d
e
f
g
h
i
k
l
m
n
o
p
q
r
s
t
v
w
x
y

B. Langley Invent 1739. *Thos. Langley Delin & Sculp.*

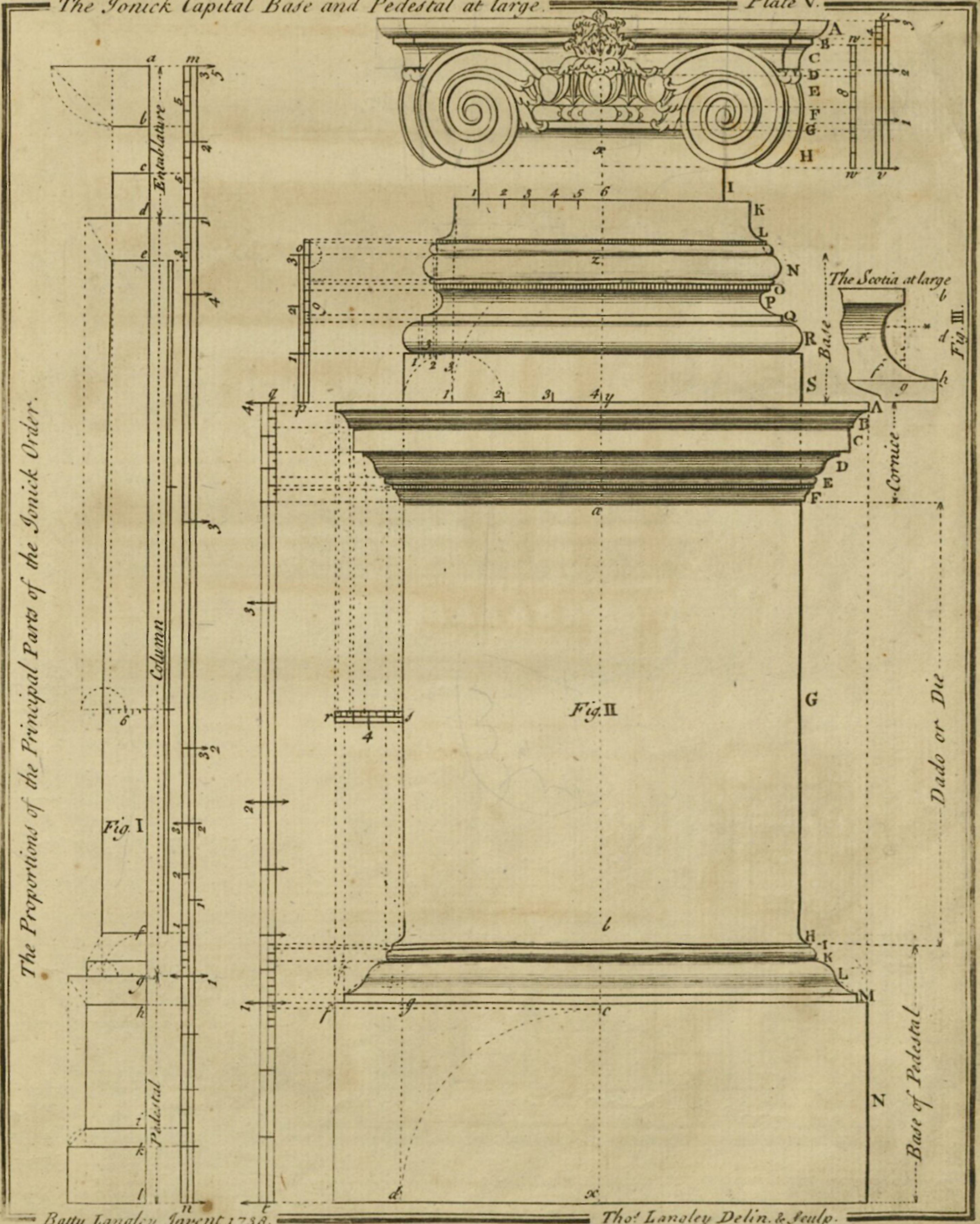
The Dorick Entablature and Planceer of its Cornice at large. Plate IV.


a
A
B
C
D
E
F
G
H
I
K
L
M
N
O
P
b
Q
R
S
Cornice
Freeze
Frize or Freeze
Architrave
g
c
d
1 2 3 4 5
1 2 3 4 5 6
1 2 3 4 5 6 7 8 9 10 11 12
The Planceer of the Cornice
W
m
V
X
X
1 2 3 4 5 6
1 2 3 4 5
1 2 3

Batty Langley Invent 1739.

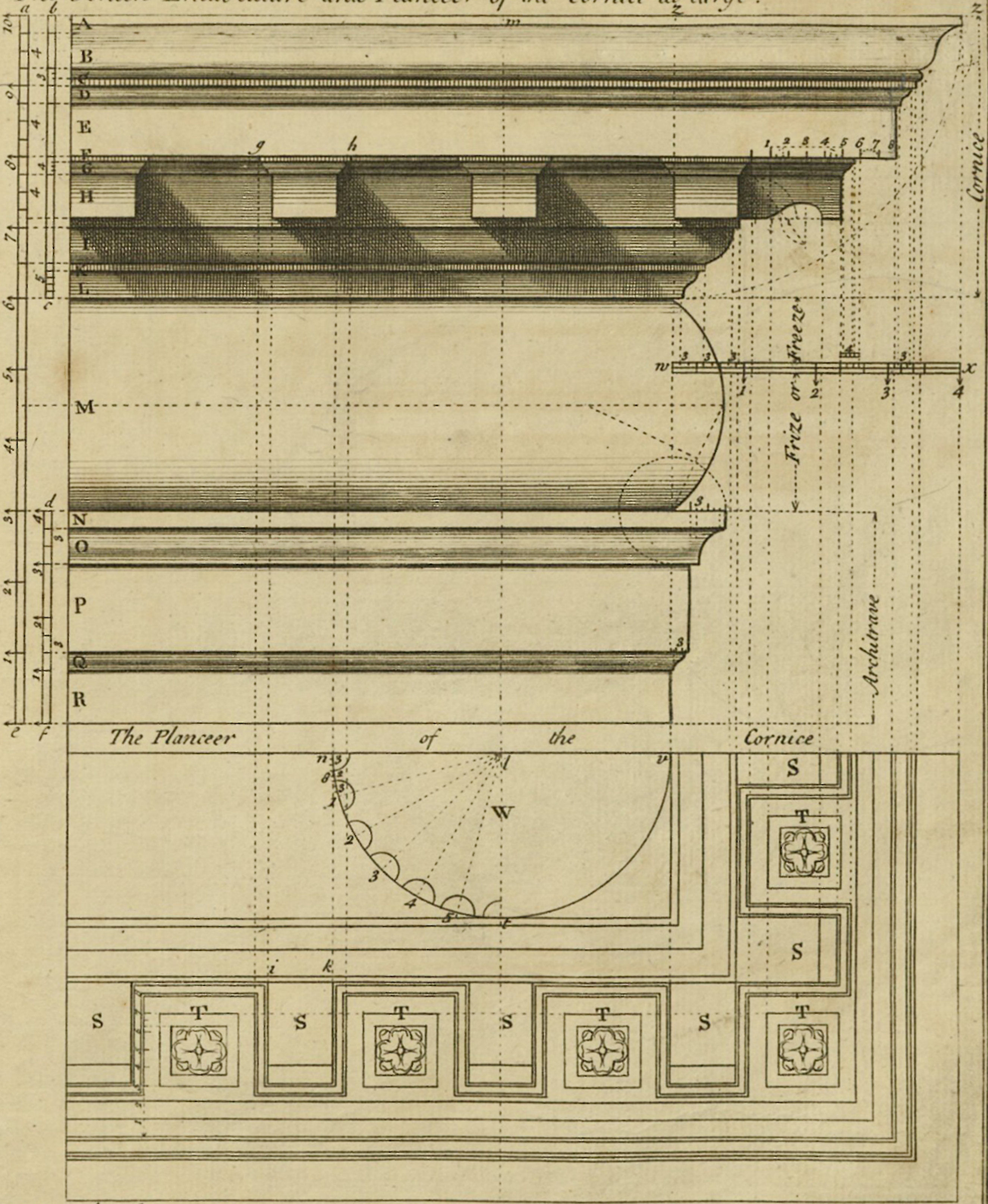
Tho.s Langley Delin & Sculp.

The Ionick Capital Base and Pedestal at large. Plate V.


The Proportions of the Principal Parts of the Ionick Order.
Fig. I
Entablature
Column
Pedestal
Fig. II
Base
Cornice
Dado or Die
Base of Pedestal
The Scotia at large
Fig. III.
A
B
C
D
E
F
G
H
I
K
L
M
N
O
P
Q
R
S

Batty Langley Invent 1738. Thos. Langley Delin. & Sculp.

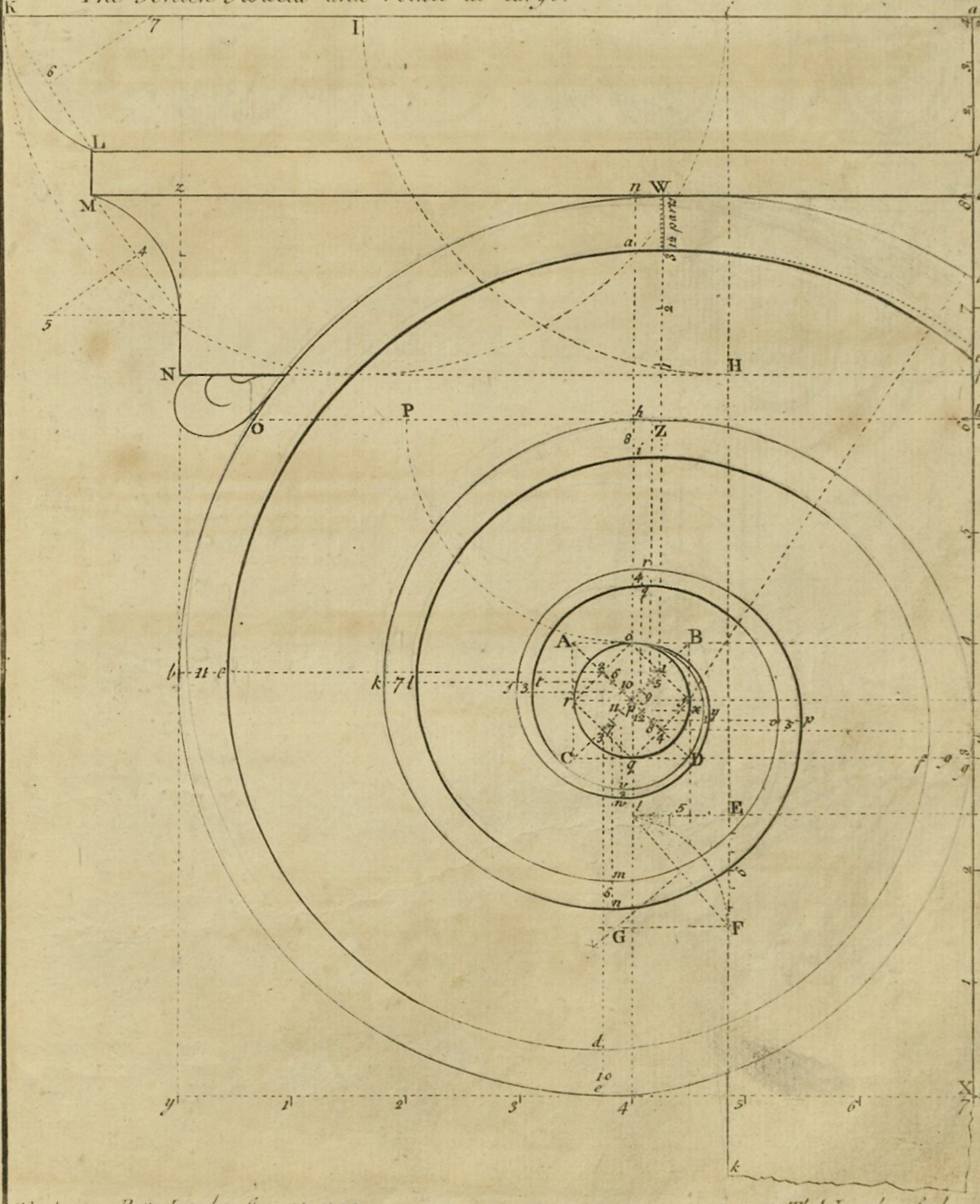
The Ionick Entablature and Planceer of the Cornice at large. Plate VI.


a
b
z
m
A
B
C
D
E
F
G
H
I
K
L
M
N
O
P
Q
R
g
h
1 2 3 4 5 6 7 8
Cornice
Frize or Freeze
Architrave
w
x
1 2 3 4
d
e
f
10 9 8 7 6 5 4 3 2 1
The Planceer of the Cornice
n
l
v
W
1 2 3 4 5
t
i
k
S
T

Batty Langley Invent 1739.

Thos. Langley Delin. & Sculp.

The Ionick Abacus and Volute at large. Plate VII.


K
7
I
a
6
L
b
M
z
n W
c
12 parts
a
d
4
5
N
H
e
f
O
P
h
Z
8
i
A
B
C
D
k 7 l
E
F
G
m
n
d
10
e
y
1
2
3
4
5
6
7
X
k

Numb. II Batty Langley Invent 1738. Thos. Langley Sculp.

The Ionick Capital with its Plan. Plate VIII.

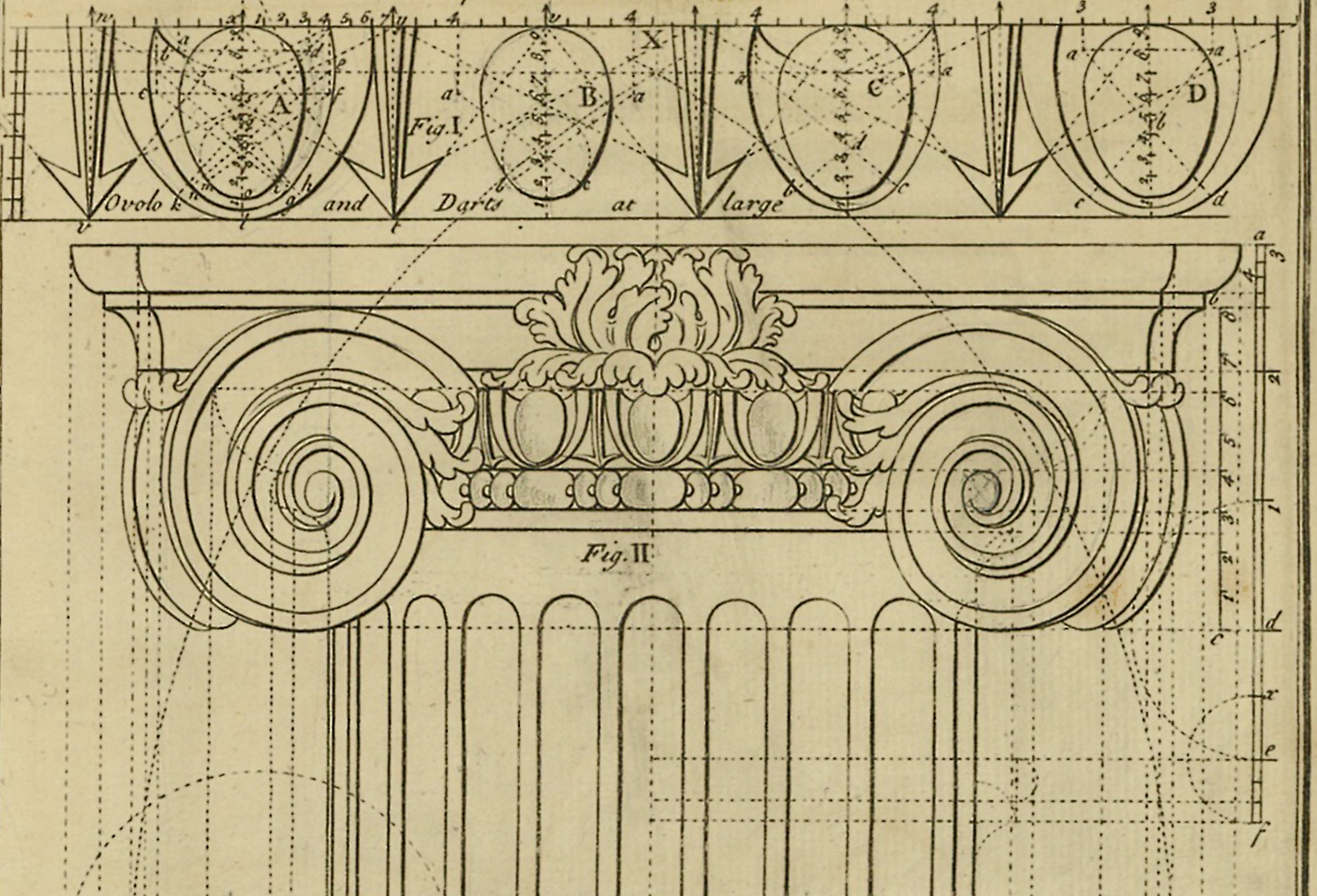


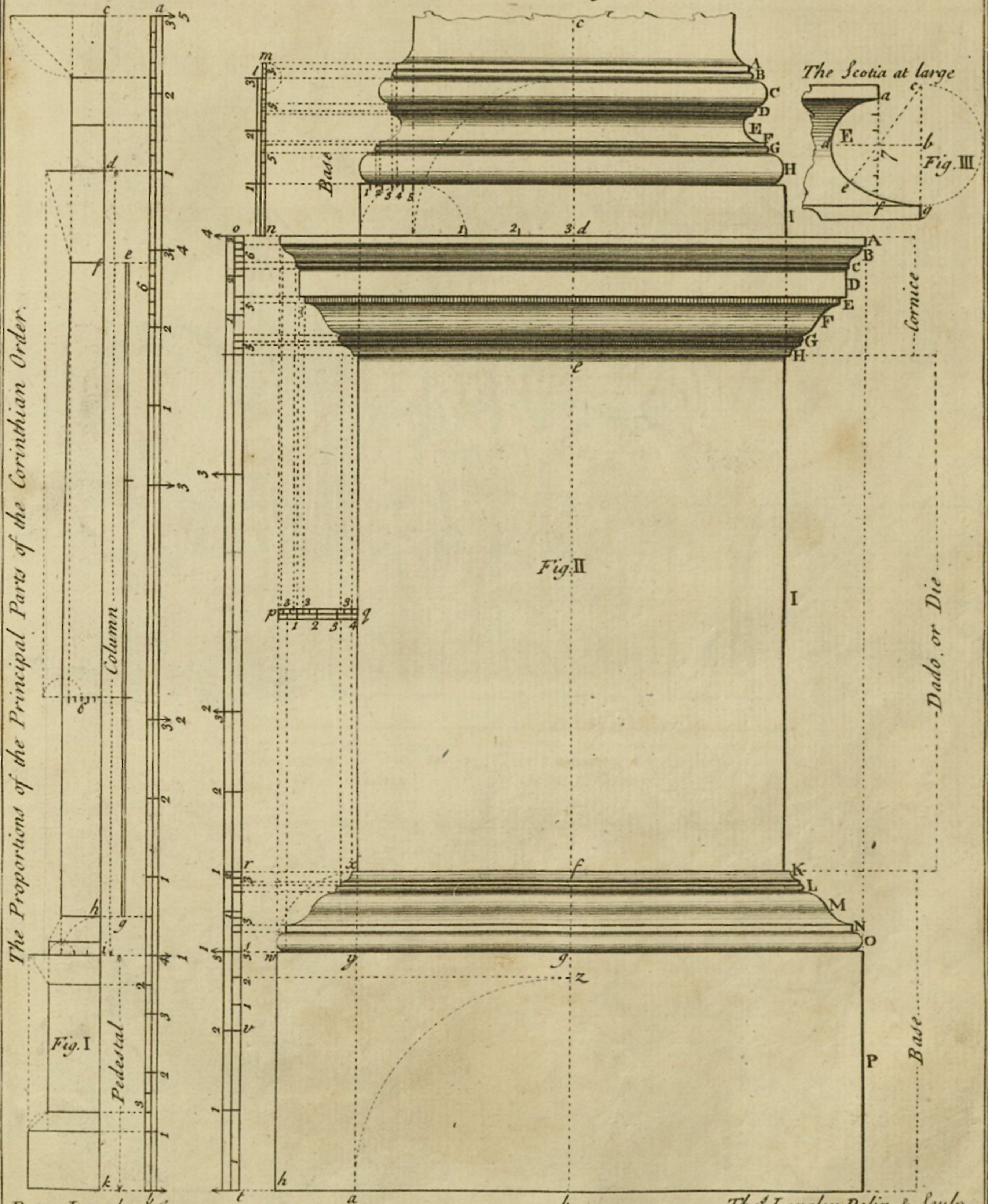
Fig. I
Ovolo and Darts at large
A
B
C
D
X
Fig. II
Y
F
E
Z
h
g
minutes
Fig. III
31 Parts
K
A
M
I
L
The Bead A at large

The Plan of one quarter of a Capital to a Column. The Plan of one quarter of a Capital to a Pillastar.

Batty Langley Invent. 1739. Thos. Langley Delin. & Sculp.

The Corinthian Base and Pedestal at large.

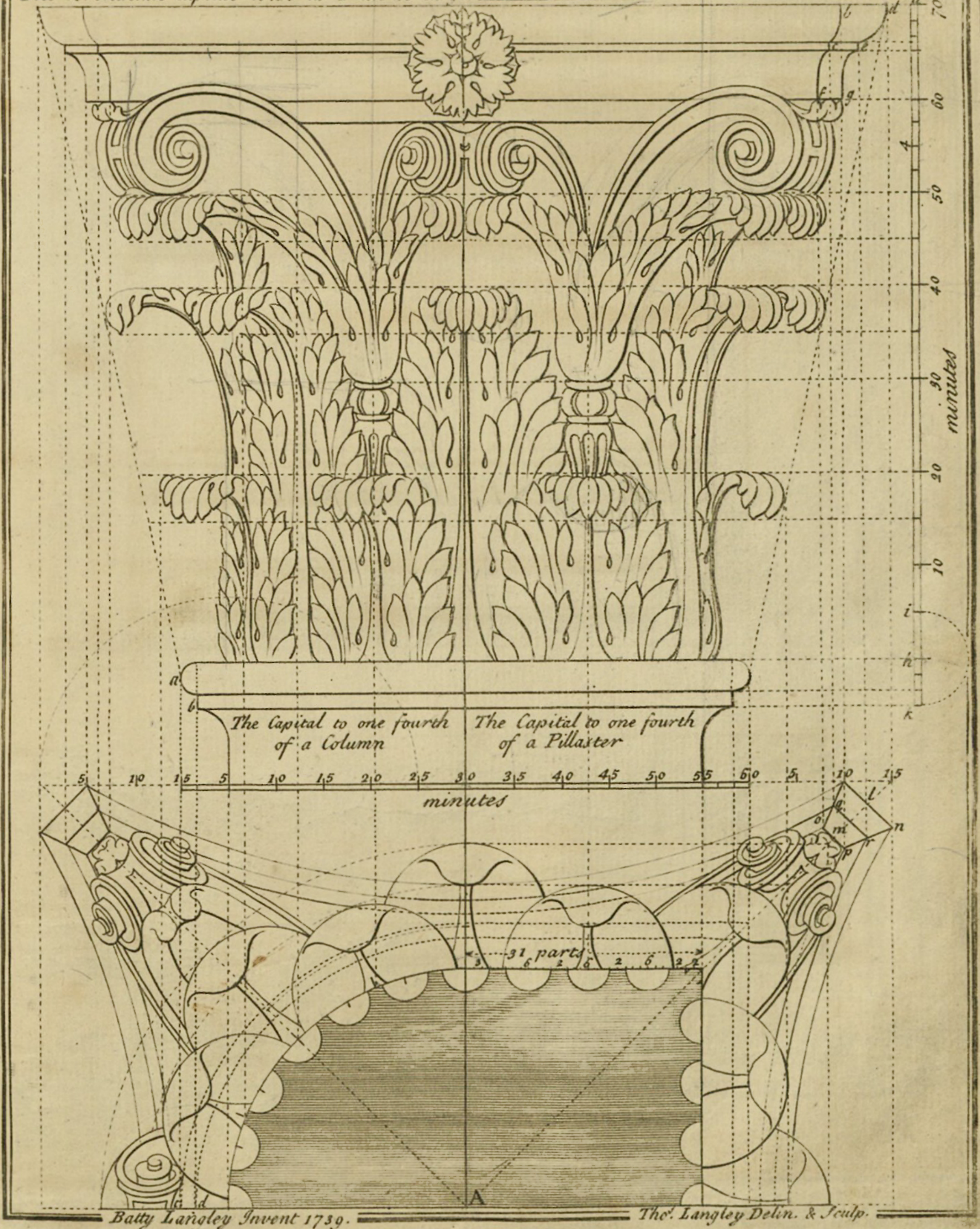
Plate IX.


The Proportions of the Principal Parts of the Corinthian Order.
Fig. I
Column
Pedestal
Fig. II
Base
Cornice
Dado, or Die
Base
The Scotia at large
Fig. III
A
B
C
D
E
F
G
H
I
K
L
M
N
O
P
a
b
c
d
e
f
g
h
k
m
n
o
p
q
r
t
v
w
y
z

Batty Langley Invent 1739.

Thos. Langley Delin. & Sculp.

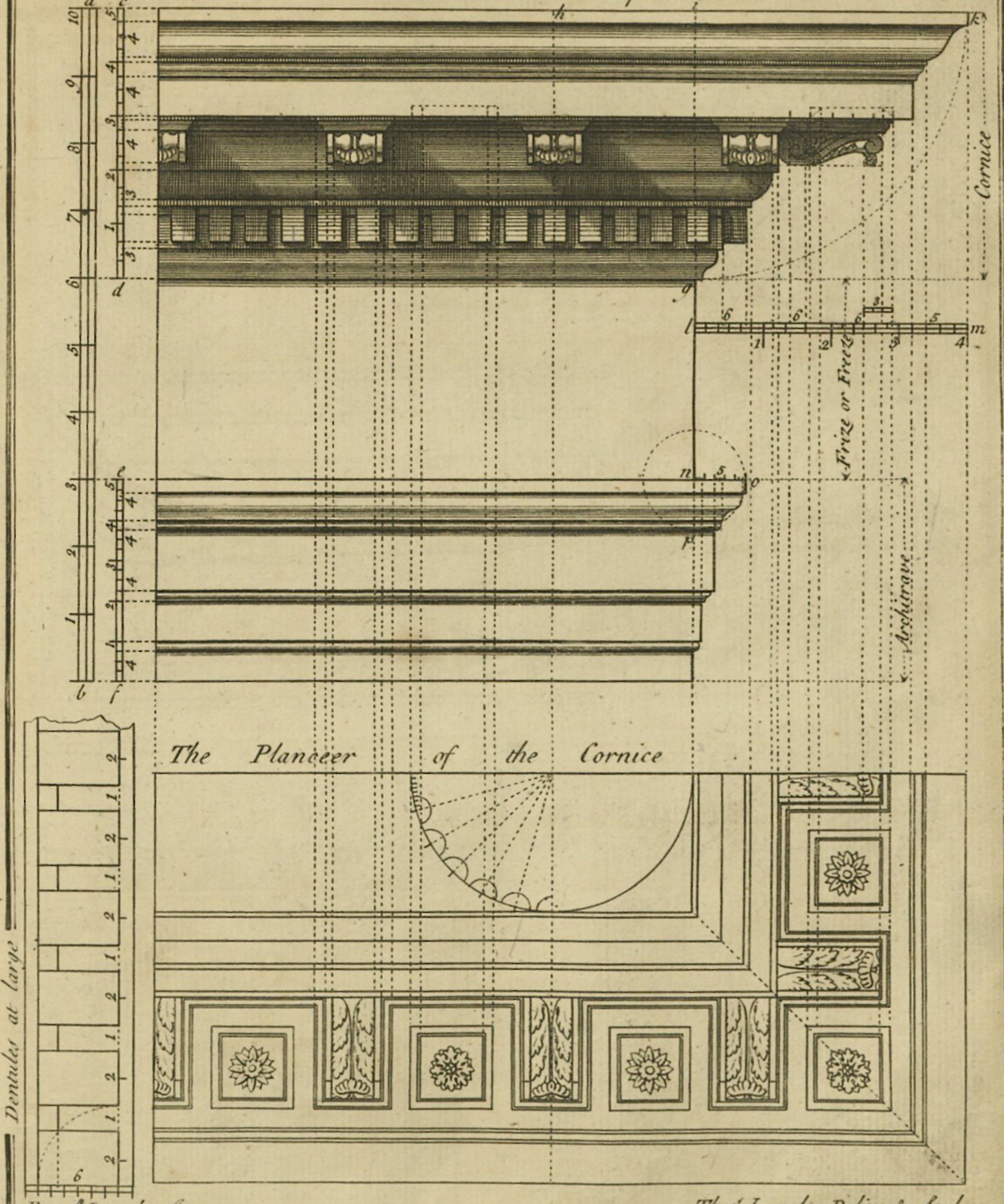
The Corinthian Capital with its Plan at large. Plate X.


b
d
e
f
g
70
60
50
40
30 minutes
20
10
i
h
k
a
b
The Capital to one fourth of a Column
The Capital to one fourth of a Pillaster
5 10 15 5 10 15 20 25 30 35 40 45 50 55 60 5 10 15
minutes
l
n
o
m
p
r
31 parts
A
c
d

Batty Langley Invent 1739. *Thos. Langley Delin. & Sculp.*

The Corinthian Entablature and Planceer of its Cornice.

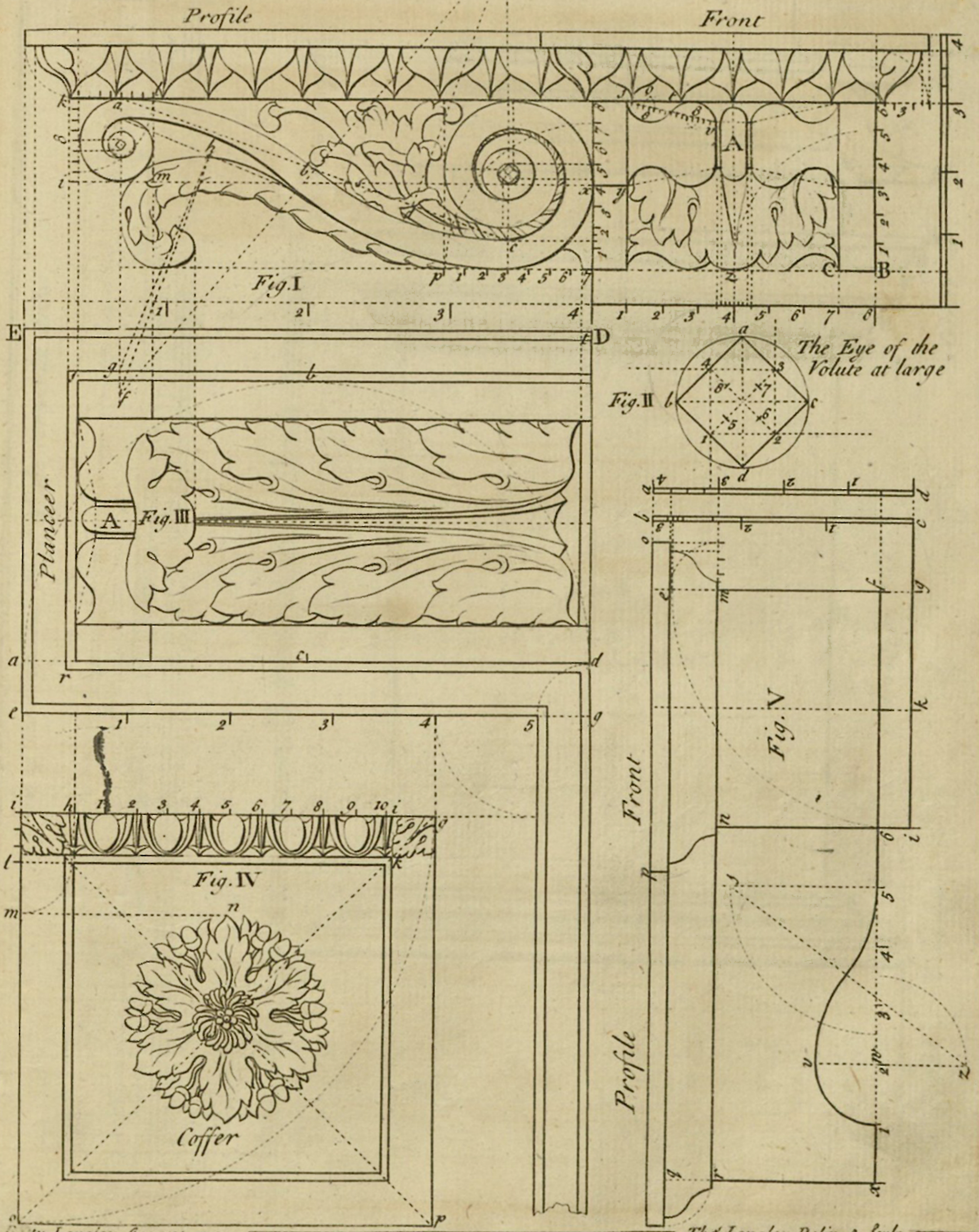
Plate XI.


a
c
h
i
k
10
9
8
7
6
5
4
3
2
1
d
g
l
m
Cornice
Frize or Freeze
Architrave
e
n
o
p
b
f
The Planceer of the Cornice
Dentules at large
6

Batty Langley Invent. 1739.

Thos. Langley Delin. & Sculp.

The Ionick and Corinthian Modilion at large Plate XII.


Profile
Front
Fig. I
A
B
C
Fig. II
The Eye of the Volute at large
a
b
c
d
E
D
Planceer
A
Fig. III
Fig. IV
Coffer
n
Fig. V
Front
Profile
1
2
3
4
5
6
7
8
9
10

Batty Langley Invent 1739. Thoˢ Langley Delin. & Sculp.

The Composite Base and Pedestal at large.

Plate XIII.

The Proportions of the Principal Parts of the Composite Order.

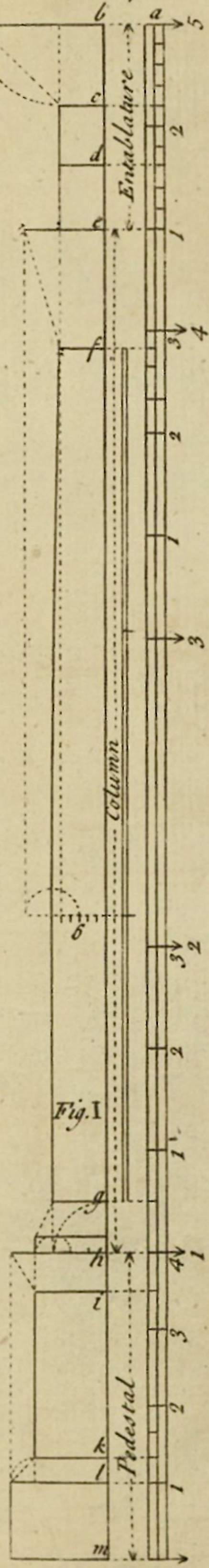


Fig. I

Entablature
Column
Pedestal
a
b
c
d
e
f
g
h
i
k
l
m
6
1
2
3
4
5

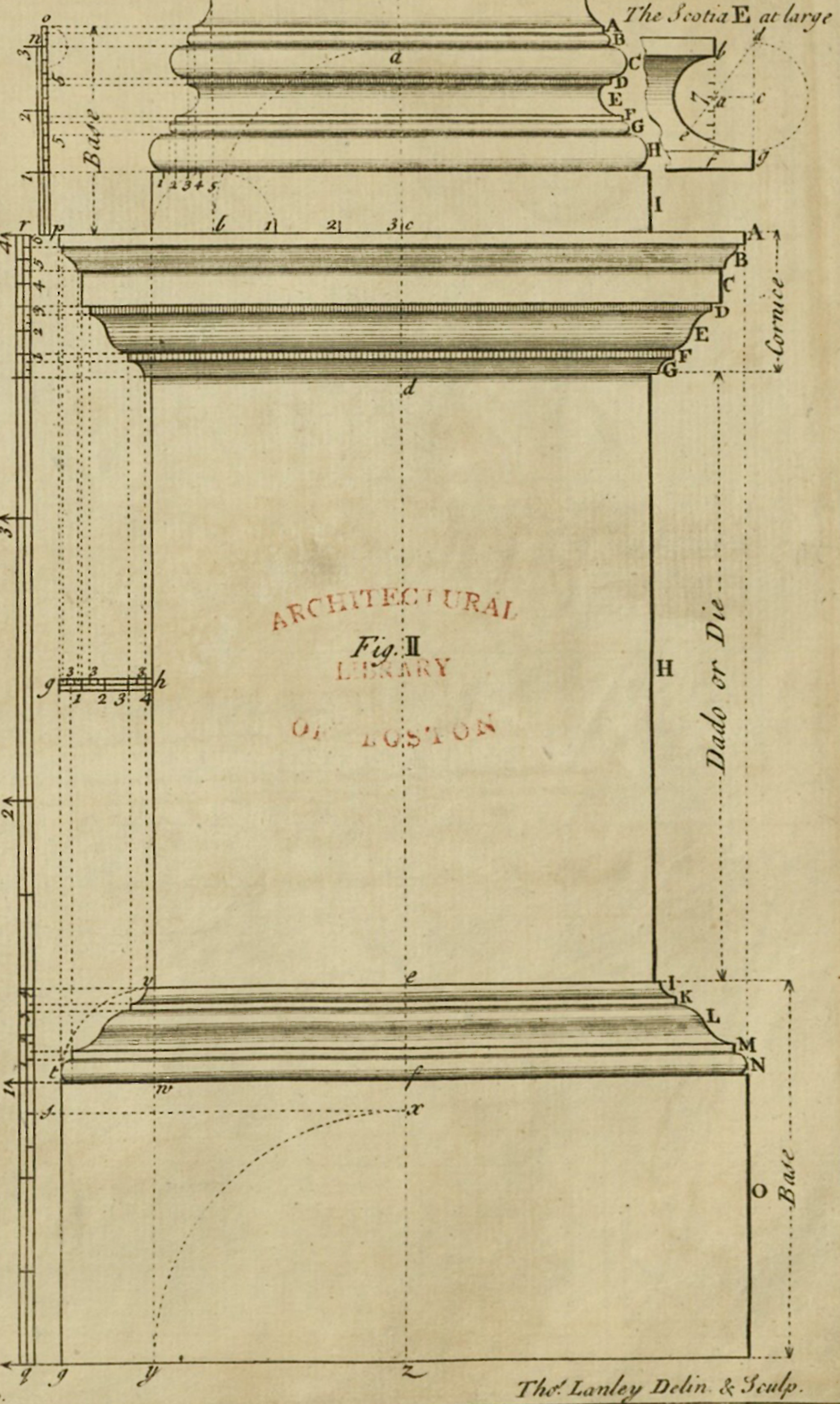


Fig. II

The Scotia E *at large*

Base
Cornice
Dado or Die
Base
A
B
C
D
E
F
G
H
I
K
L
M
N
O
a
b
c
d
e
f
g
h
n
o
p
q
r
s
t
v
w
x
y
z
1
2
3
4
5

Batty Langley Invent 1739.

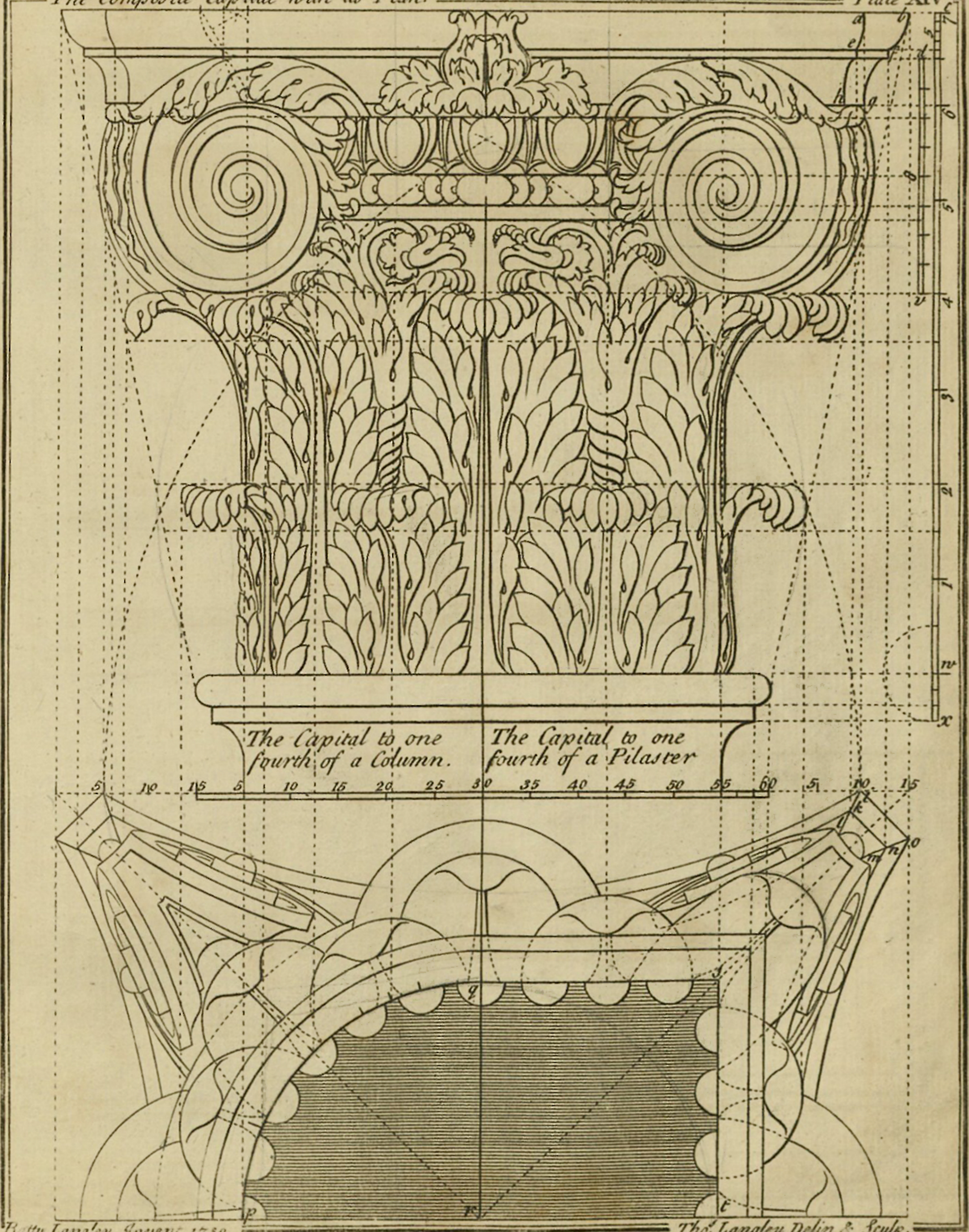
Thoˢ. Lanley Delin. & Sculp.

BOSTON ARCHITECTURAL CLUB L

ARCHITECTURAL LIBRARY OF BOSTON

The Composite Capital with its Plan.

Plate XIV.

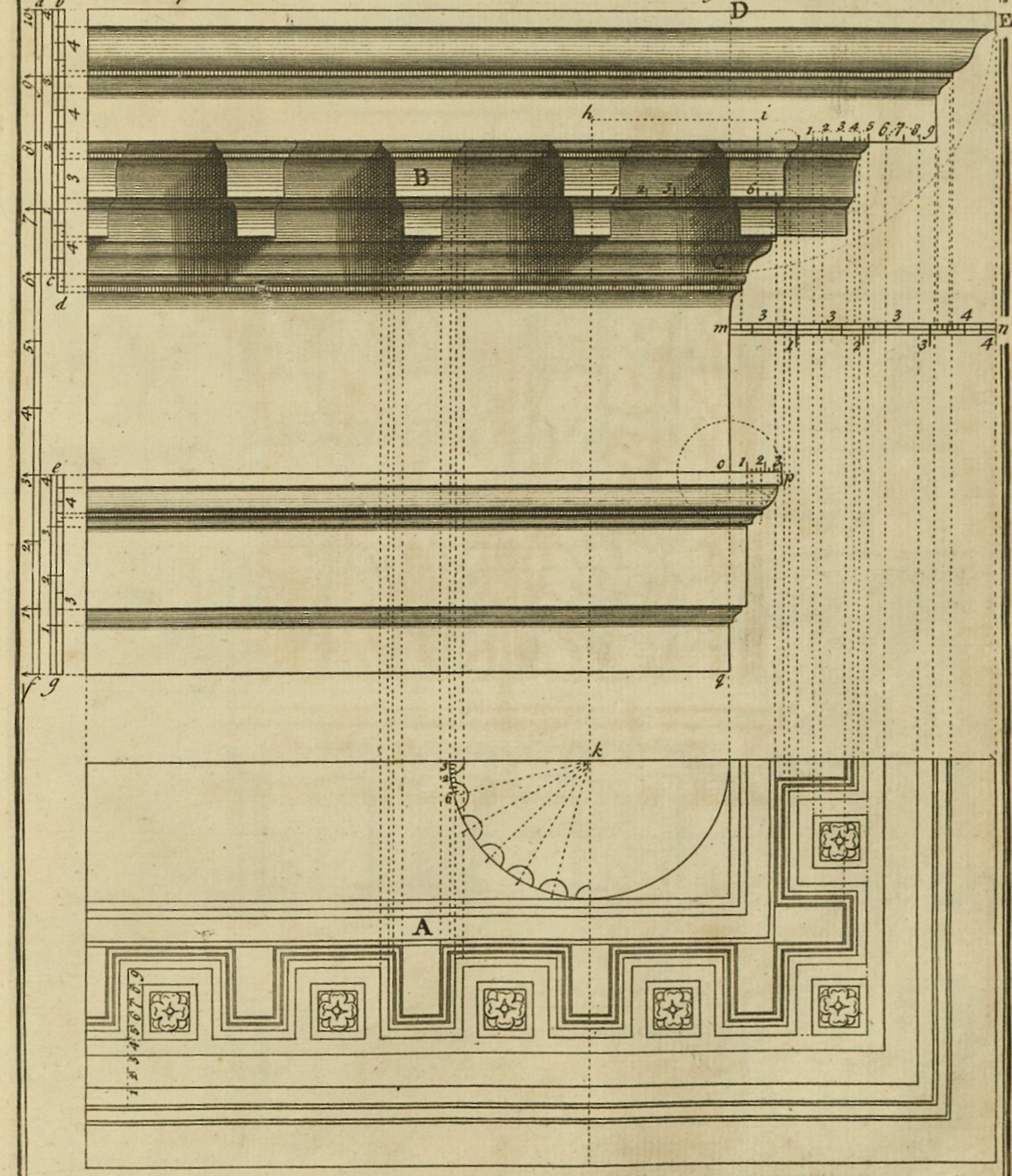

The Capital to one fourth of a Column.
The Capital to one fourth of a Pilaster
5 10 15 5 10 15 20 25 30 35 40 45 50 55 60 5 10 15
a
b
c
d
e
f
g
h
7
6
8
5
4
3
2
1
v
w
x
k
l
m
n
o
q
s
p
r
t

Batty Langley Invent 1739.

Thos. Langley Delin & Sculp.

The Composite Entablature with its Planceer at large.

Plate XV.



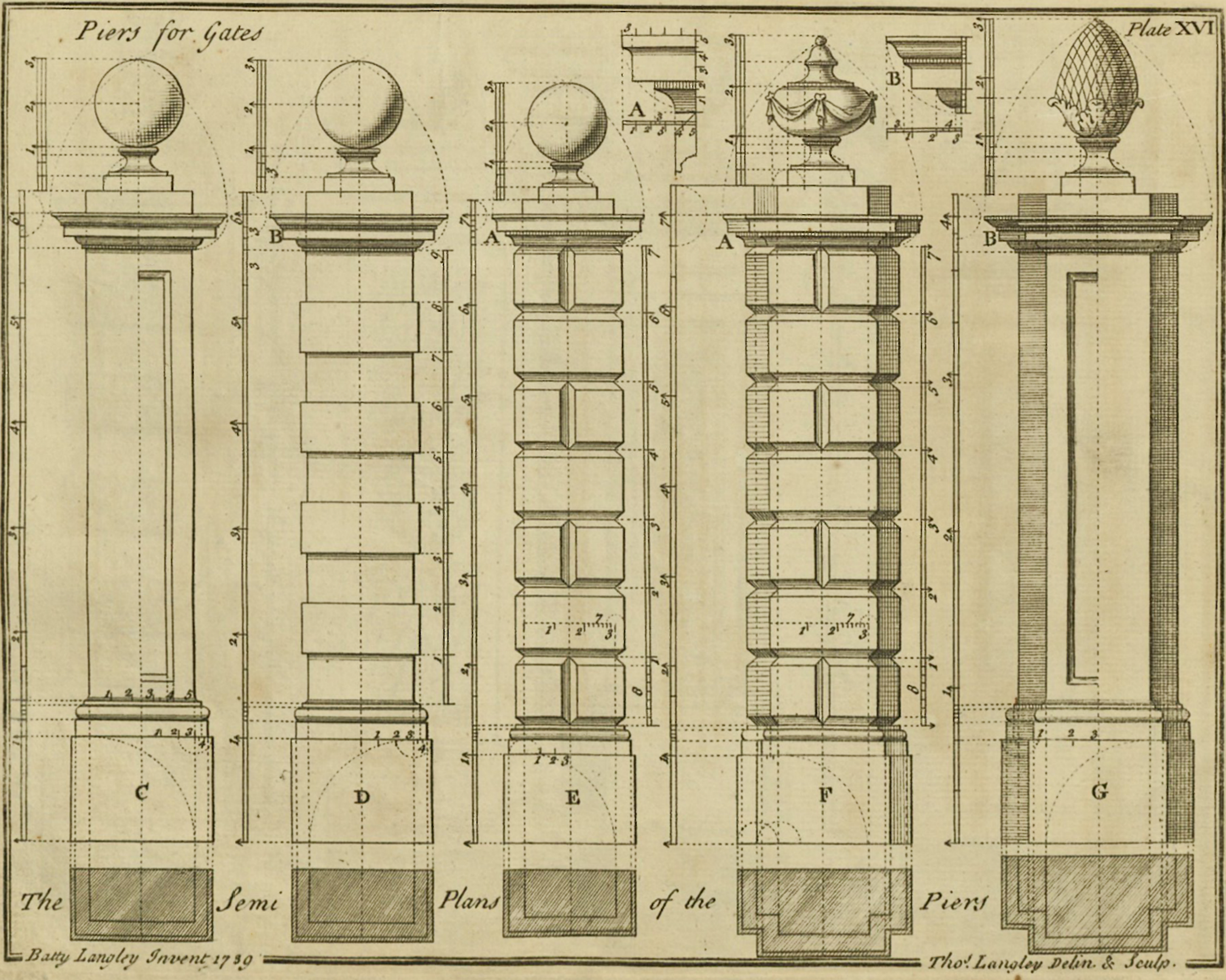
D
E
B
C
h
i
a
b
c
d
e
f
g
m
n
o
p
q
k
A

Batty Langley Invent 1739.

Thoˢ. Langley Delin. & Sculp.

Piers for Gates

Plate XVI

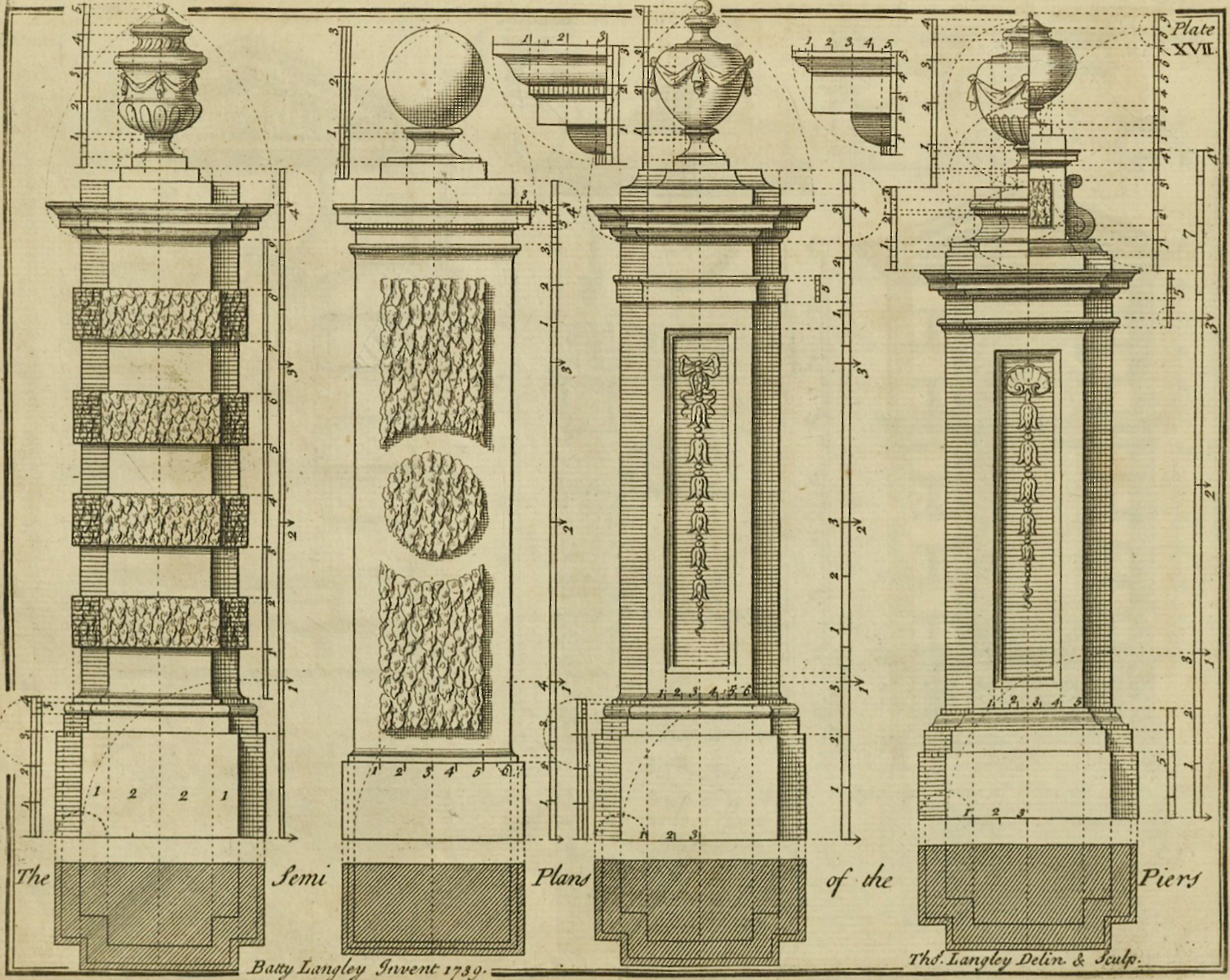

C
D
E
F
G
A
B
A
A
B
B

The Semi Plans of the Piers

Batty Langley Invent 1739

Thos. Langley Delin. & Sculp.

Plate XVII.


1
2
3
4
5
6
7
8
9
1 2 3 4 5 6

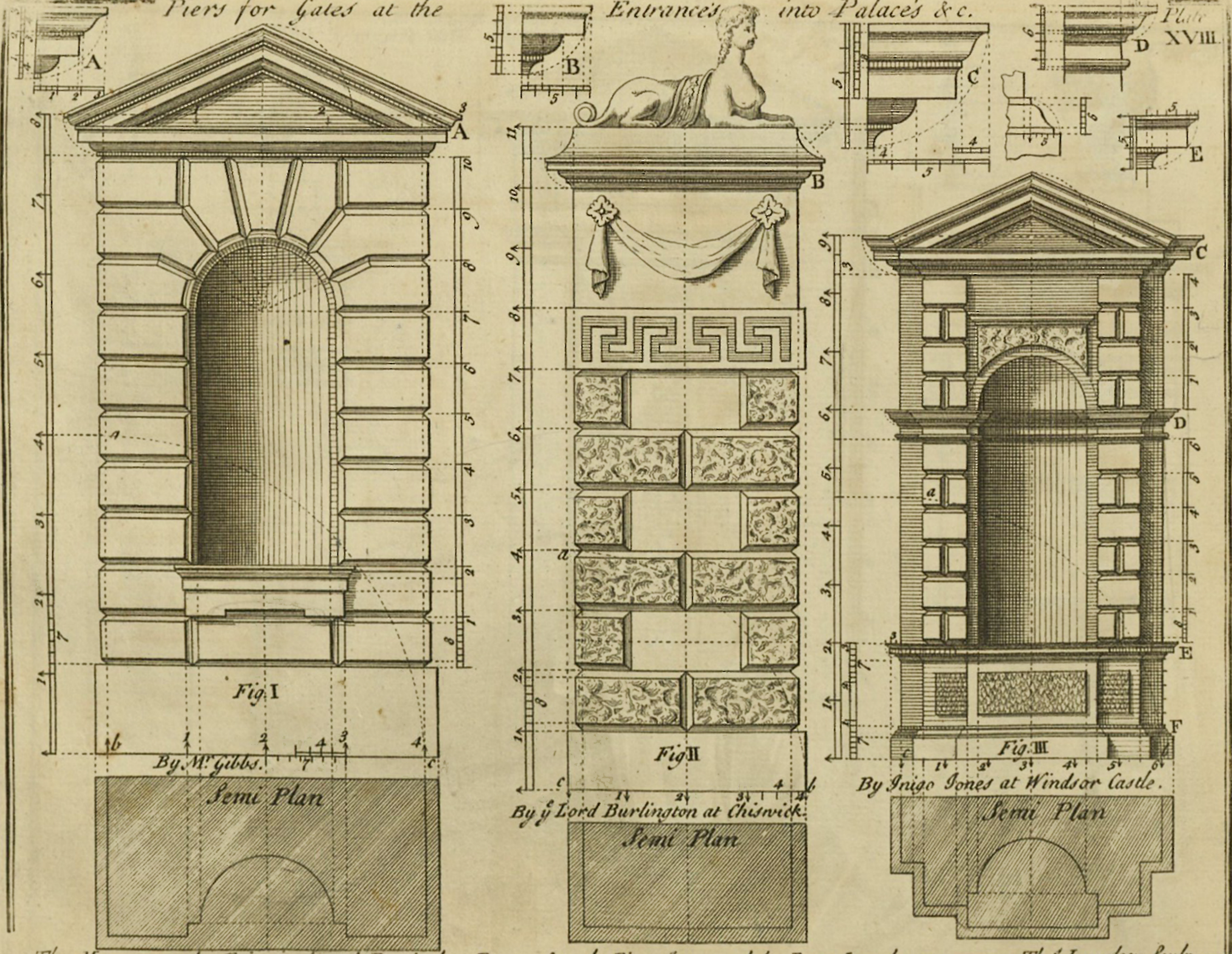
The Semi Plans of the Piers

Batty Langley Invent 1739.

Thoˢ. Langley Delin. & Sculp.

Piers for Gates at the Entrances into Palaces &c.

Plate XVIII.


A
B
C
D
E
F
a
b
c
Fig. I
Fig. II
Fig. III
Semi Plan
Semi Plan
Semi Plan

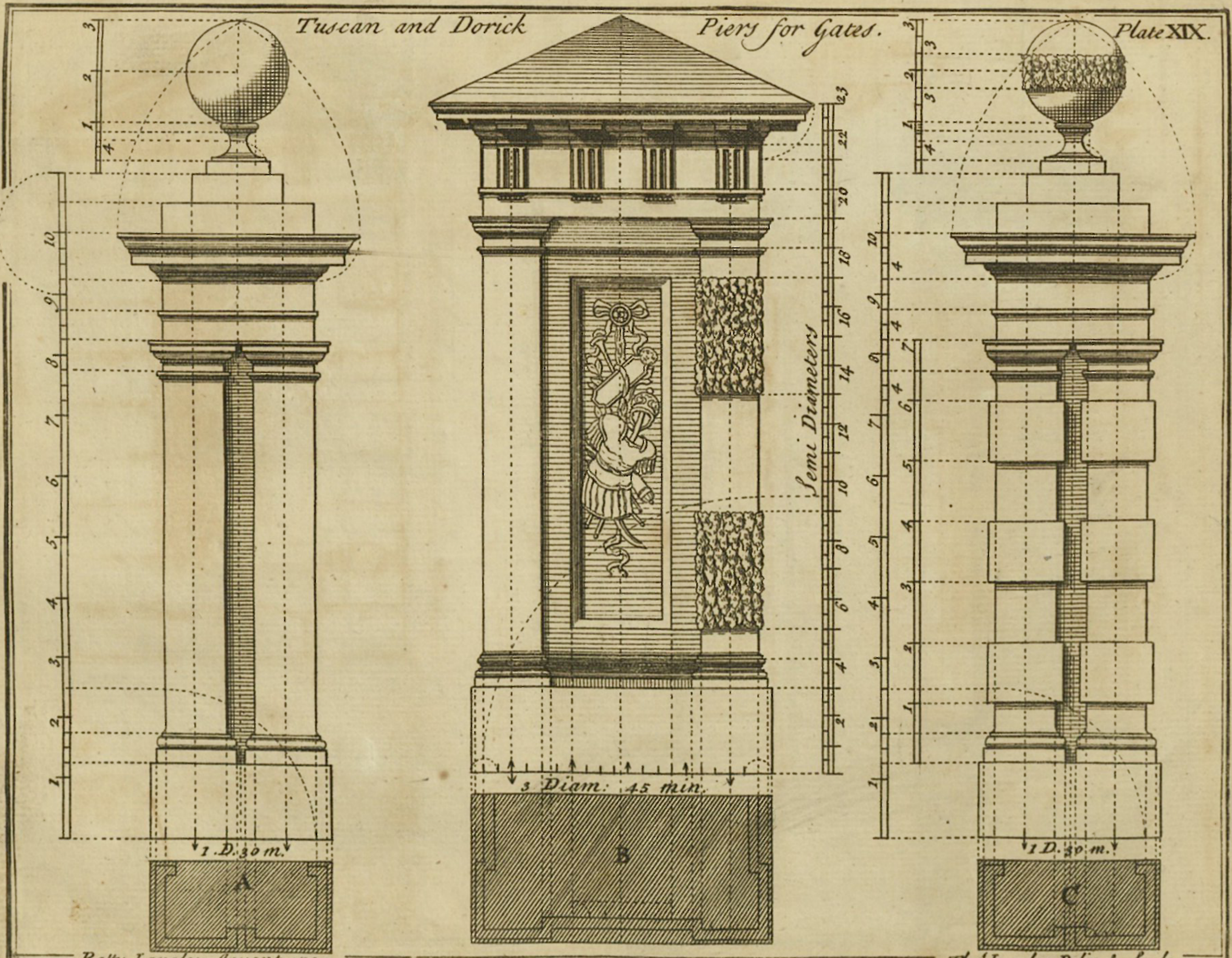
By Mr. Gibbs.

By ye Lord Burlington at Chiswick.

By Inigo Jones at Windsor Castle.

The Measures to the Principal and Particular Parts of each Pier Invented by Batty Langley. Thos. Langley Sculp.

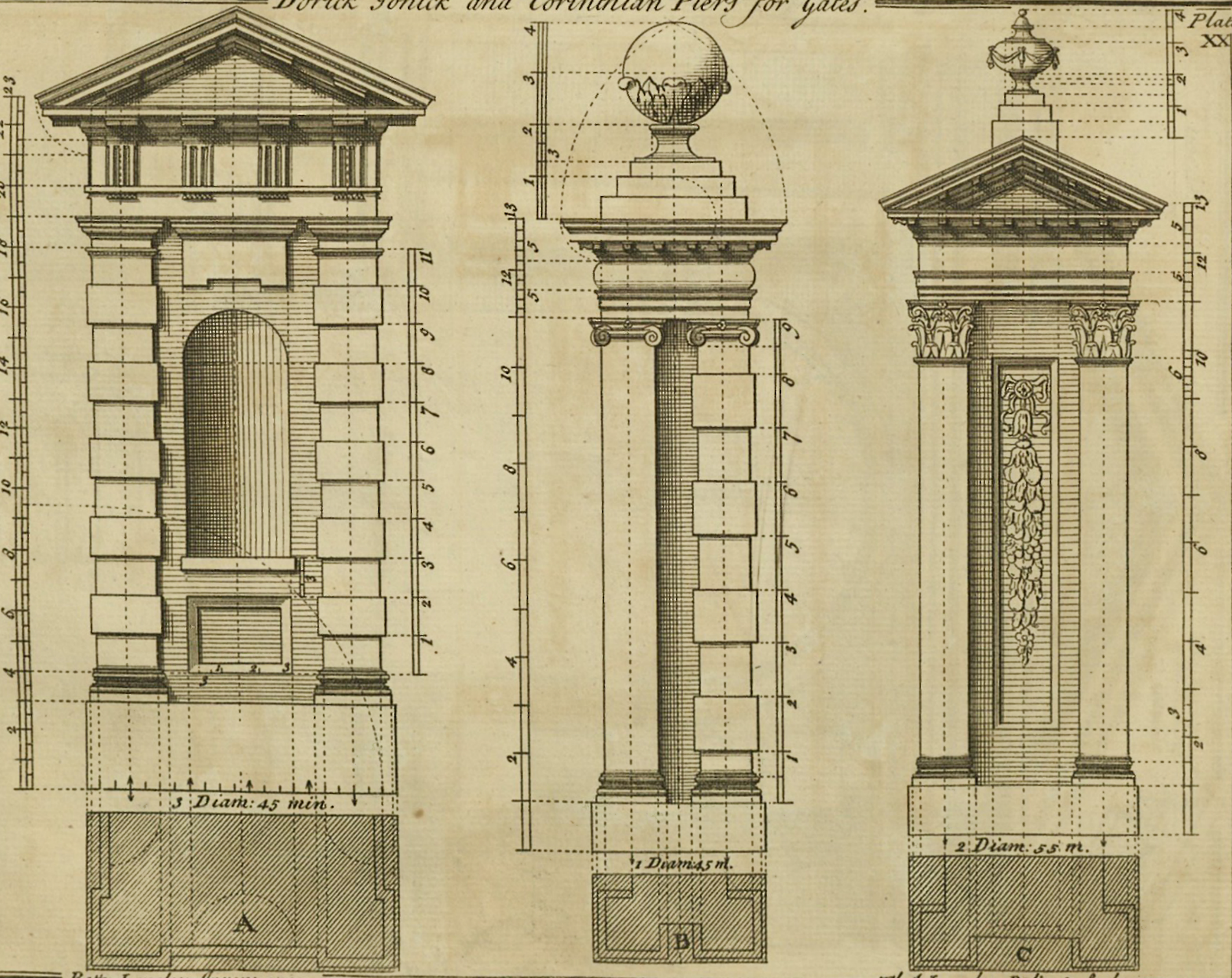
Tuscan and Dorick Piers for Gates. Plate XIX.


3
2
1
4
10
9
8
7
6
5
4
3
2
1
1 D. 30 m.
A
23
22
20
18
16
14
12
10
8
6
4
2
Semi Diameters
3 Diam: 45 min.
B
3
3
2
3
1
4
10
4
9
4
8
7
4
6
7
5
6
4
5
3
4
2
3
1
2
1
1 D. 30 m.
C

Batty Langley Invent 1739. Thoˢ. Langley Delin. & Sculp.

Dorick Ionick and Corinthian Piers for Gates.

Plate XX

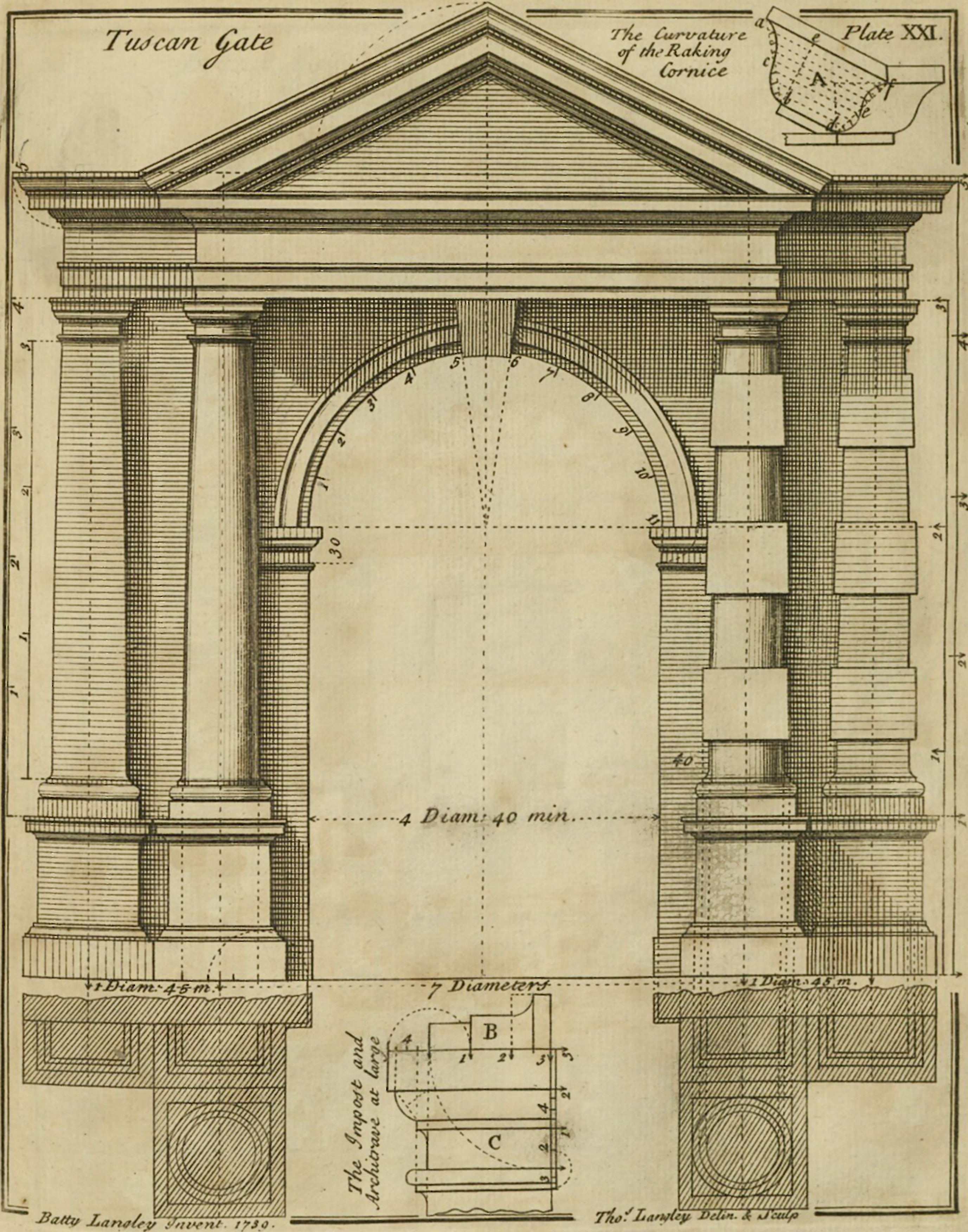

3 Diam: 45 min.
1 Diam. 45 m.
2 Diam: 55 m.
A
B
C
2
4
6
8
10
12
14
16
18
20
22
23
1
2
3
4
5
6
7
8
9
10
11
13
5
12
3

Batty Langley Invent 1739.

Thoˢ Langley Delin. & Sculp.

Tuscan Gate

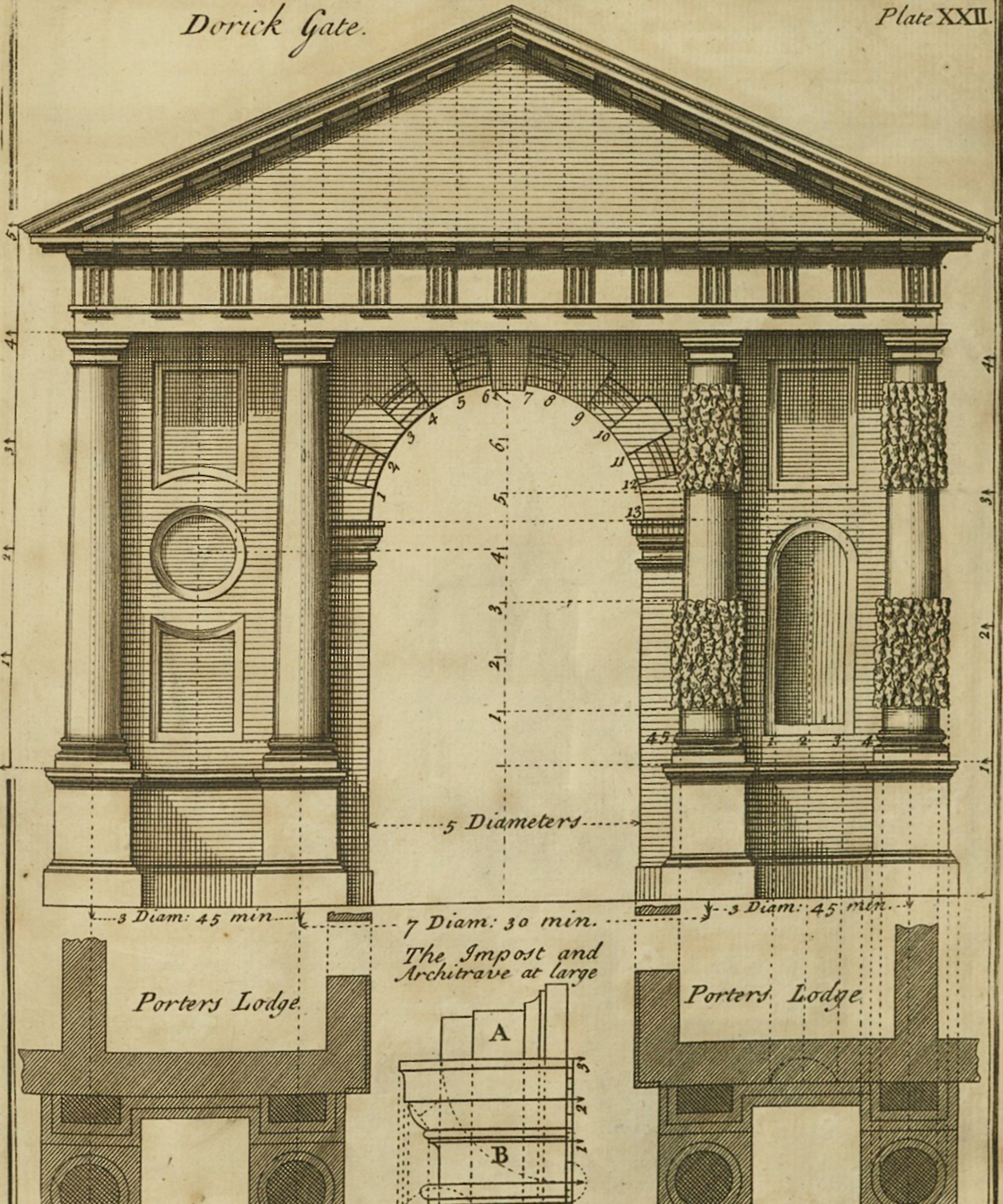
Plate XXI.


The Curvature of the Raking Cornice
A
a
c
e
f
1
2
3
4
5
6
7
8
9
10
11
30
40
4 Diam: 40 min
7 Diameters
1 Diam: 45 m.
1 Diam: 45 m.
The Impost and Architrave at large
B
C

Batty Langley Invent. 1739.

Thos. Langley Delin. & Sculp

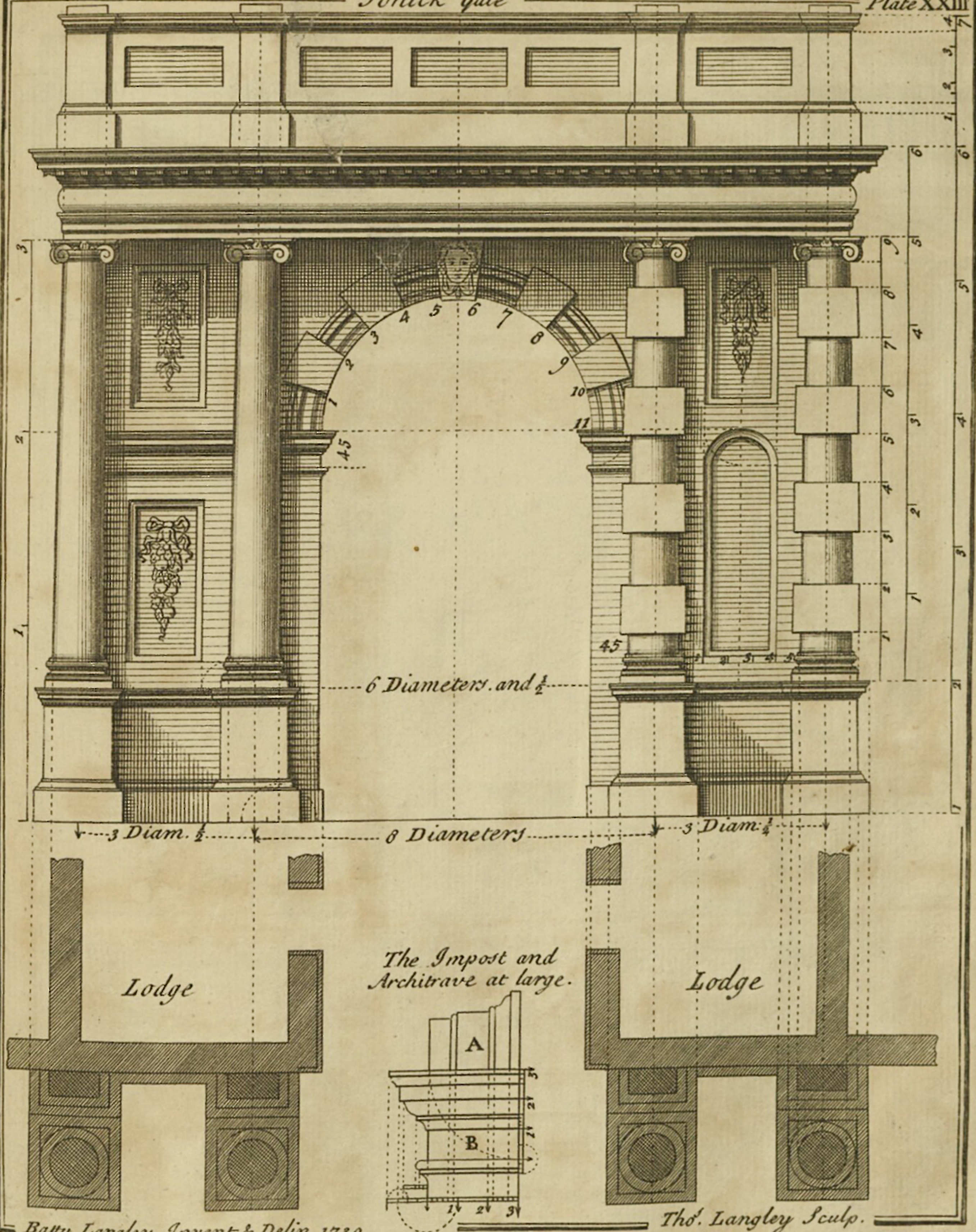
Dorick Gate. Plate XXII.


5 Diameters
3 Diam: 45 min
7 Diam: 30 min.
3 Diam: 45 min.
The Impost and Architrave at large
A
B
Porters Lodge
Porters Lodge
1 2 3 4 5 6 7 8 9 10 11 12 13
1 2 3 4 5 6
4 5
1 2 3 4

Batty Langley Invent & Delin. 1739. Thos Langley Sculp.

Ionick Gate

Plate XXIII



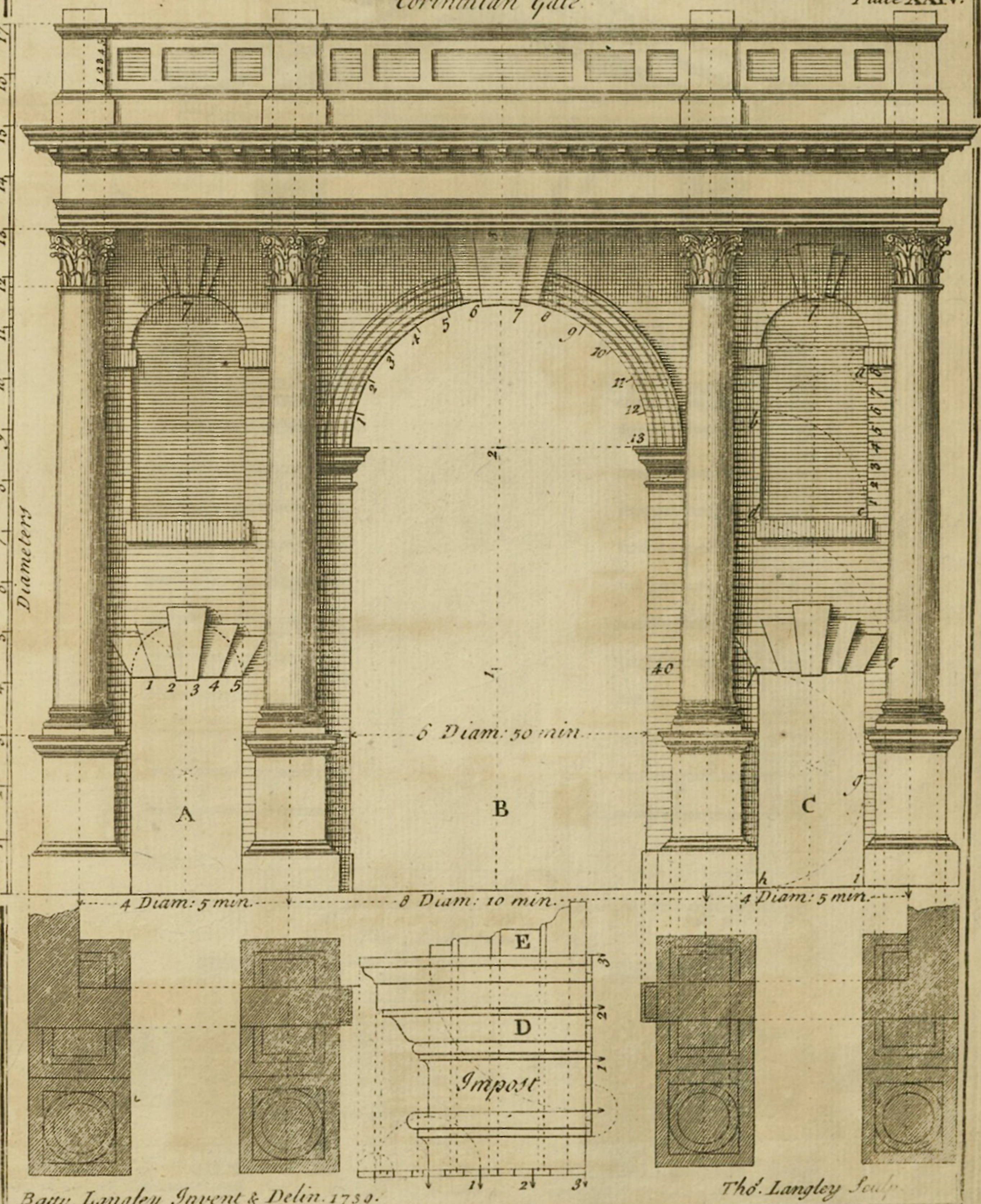
1 2 3 4 5 6 7 8 9 10 11
45
45
6 Diameters. and ½
3 Diam. ½
8 Diameters
3 Diam. ¼
Lodge
Lodge
The Impost and Architrave at large.
A
B
1 2 3

Batty Langley Invent & Delin. 1739.

Thoˢ. Langley Sculp.

Corinthian Gate

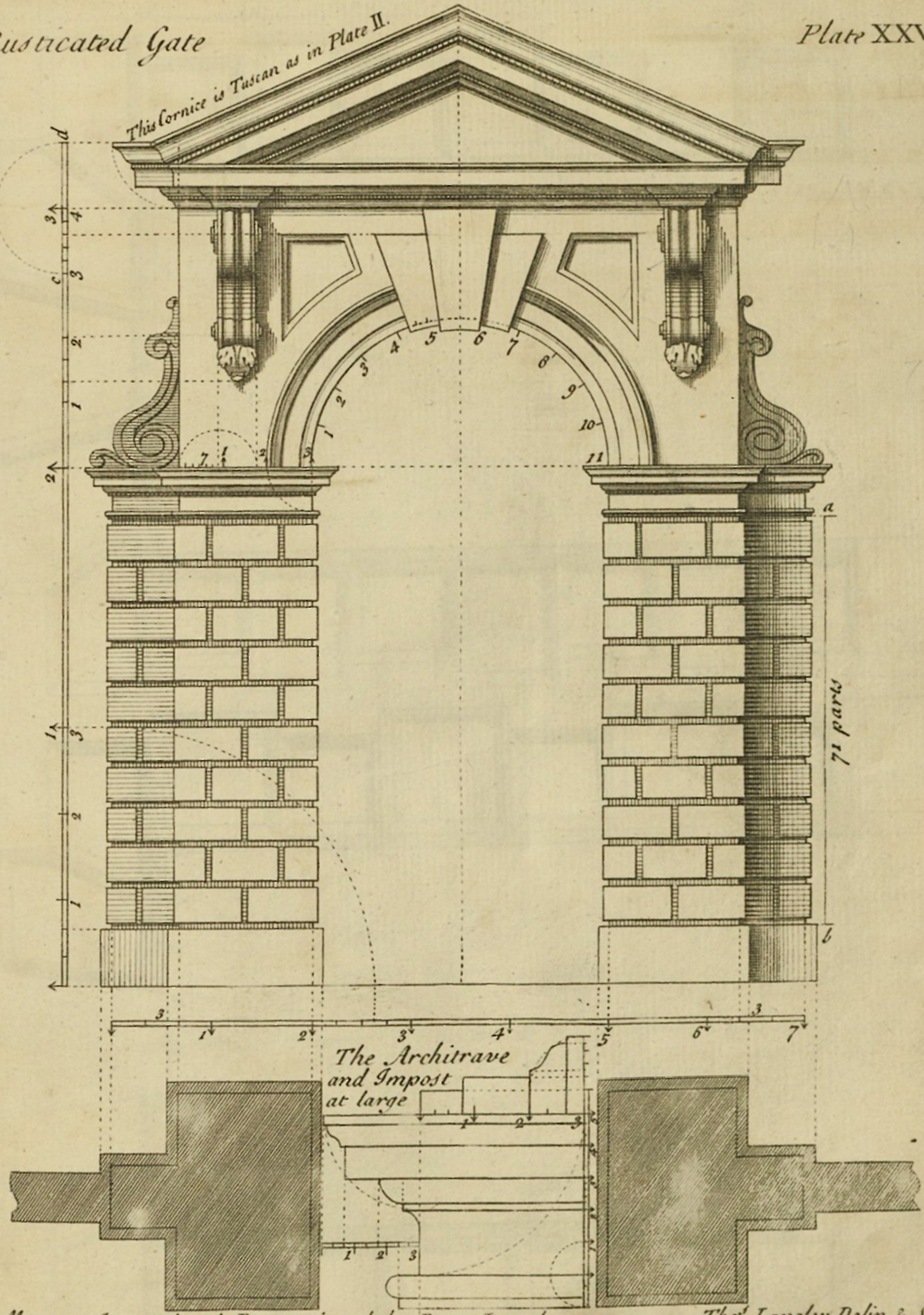
Plate XXIV.


Diameters
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
1 2 3 4 5
7
7
1 2 3 4 5 6 7 8 9 10 11 12 13
1 2 3 4 5
6 Diam: 50 min
A
B
C
40
a
b
c
d
e
g
h
i
1 2 3 4 5 6 7 8
4 Diam: 5 min.
8 Diam: 10 min.
4 Diam: 5 min.
E
D
Impost
1
2
3

Batty Langley Invent & Delin. 1739.

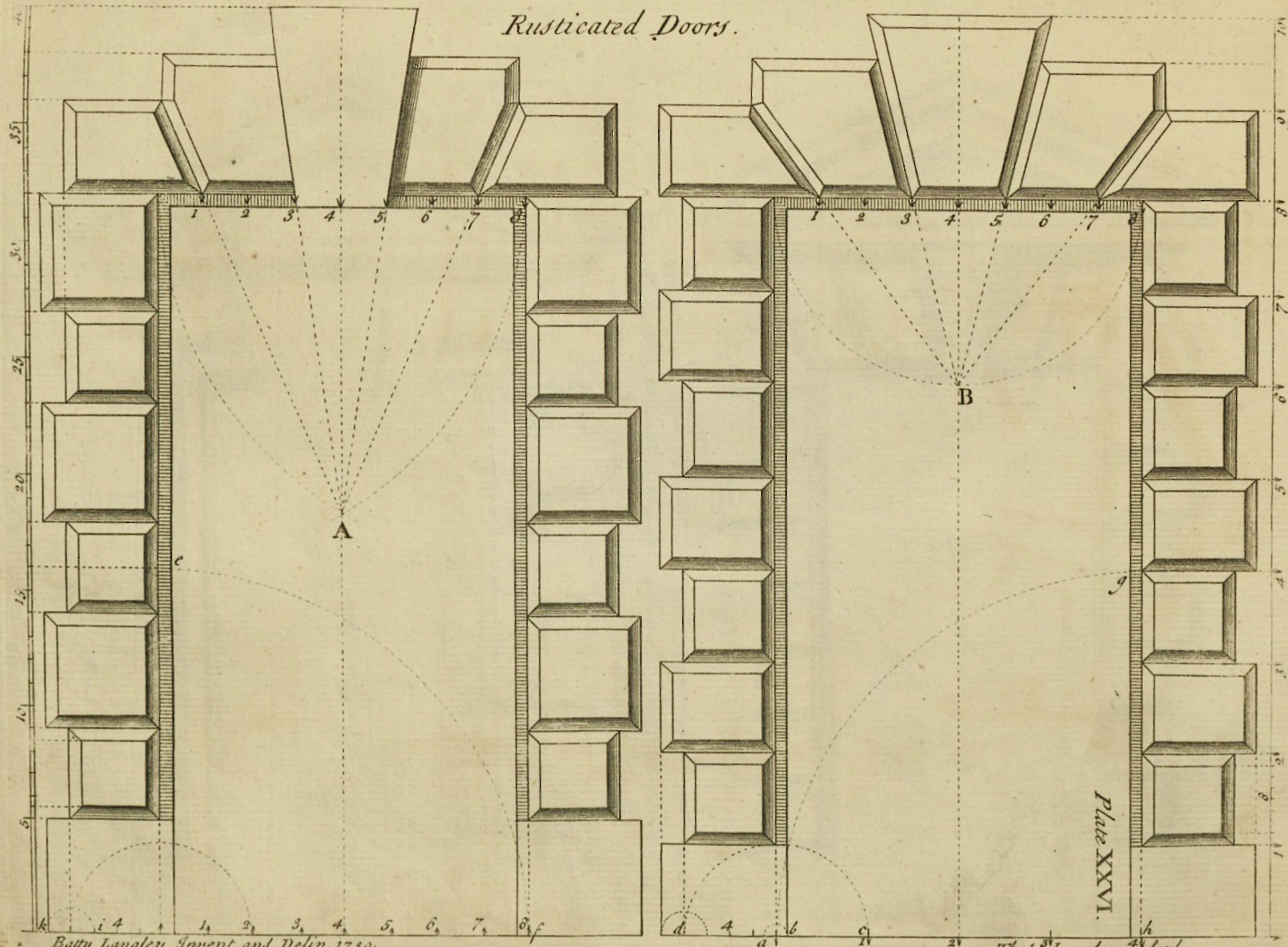
Thoˢ. Langley Sculp.

Rusticated Gate Plate XXV.


This Cornice is Tuscan as in Plate II.
d
c
3
4
3
2
1
2
1
3
2
1
1
2
3
4
5
6
7
8
9
10
11
7
a
b
71 parts
3
1
2
3
4
5
6
7
3
The Architrave and Impost at large
1
2
3
1
2
3

The Measures Invented and Proportioned by Batty Langley 1739. Thos. Langley Delin. & Sculp.

Rusticated Doors.



A
B
1
2
3
4
5
6
7
8
5
10
15
20
25
30
35
40
c
d
e
f
g
h
i
k
a
b

Plate XXVI.

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

Rusticated Doors

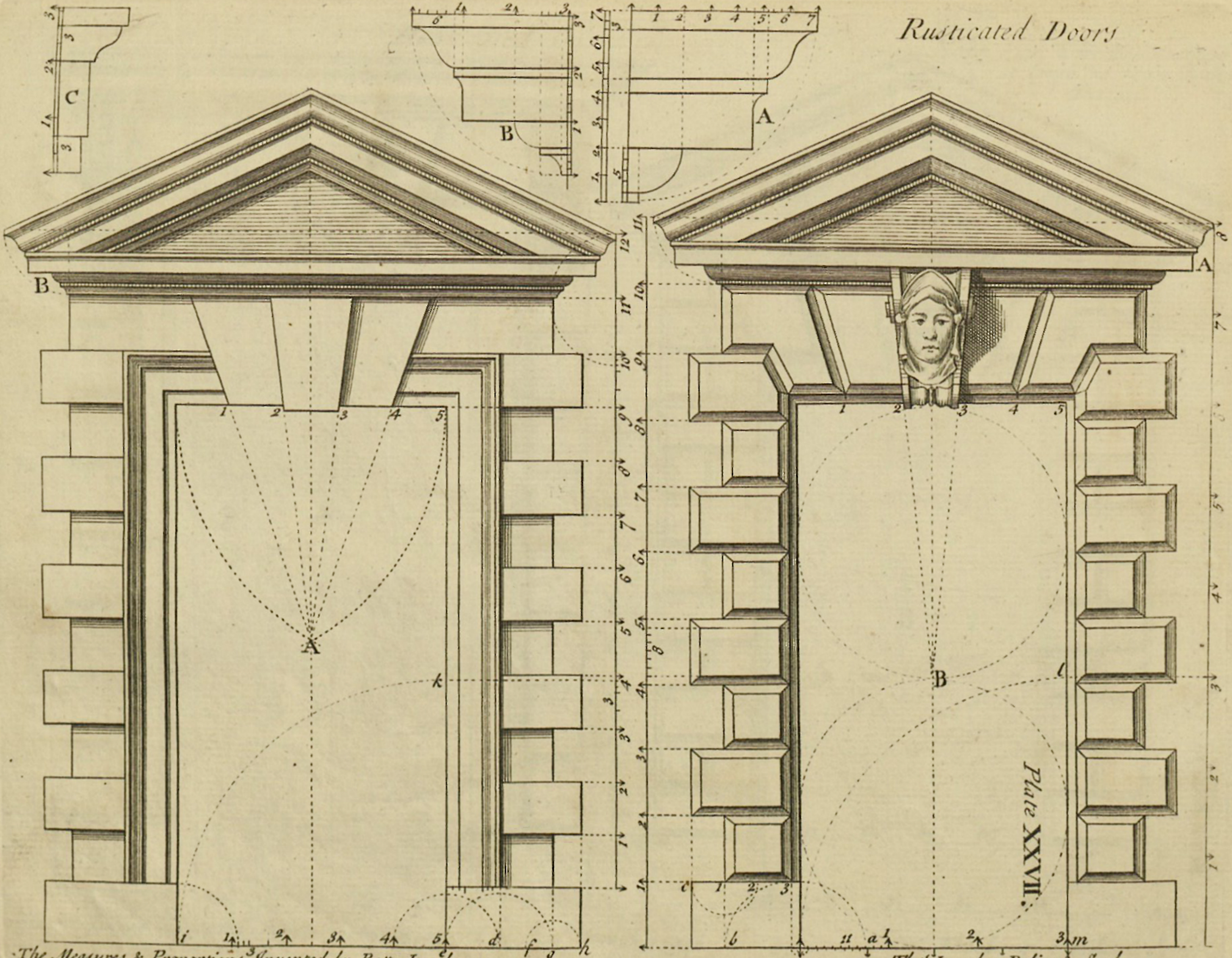

A
B
C
A
B
k
l
i
d
f
g
h
a
b
c
m

Plate XXVII.

The Measures & Proportions Invented by Batty Langley 1739.

Thoˢ. Langley Delin & Sculp.

Rusticated Doors

Vide *Plate* II *for these Cornices at large as being both Tuscan.*

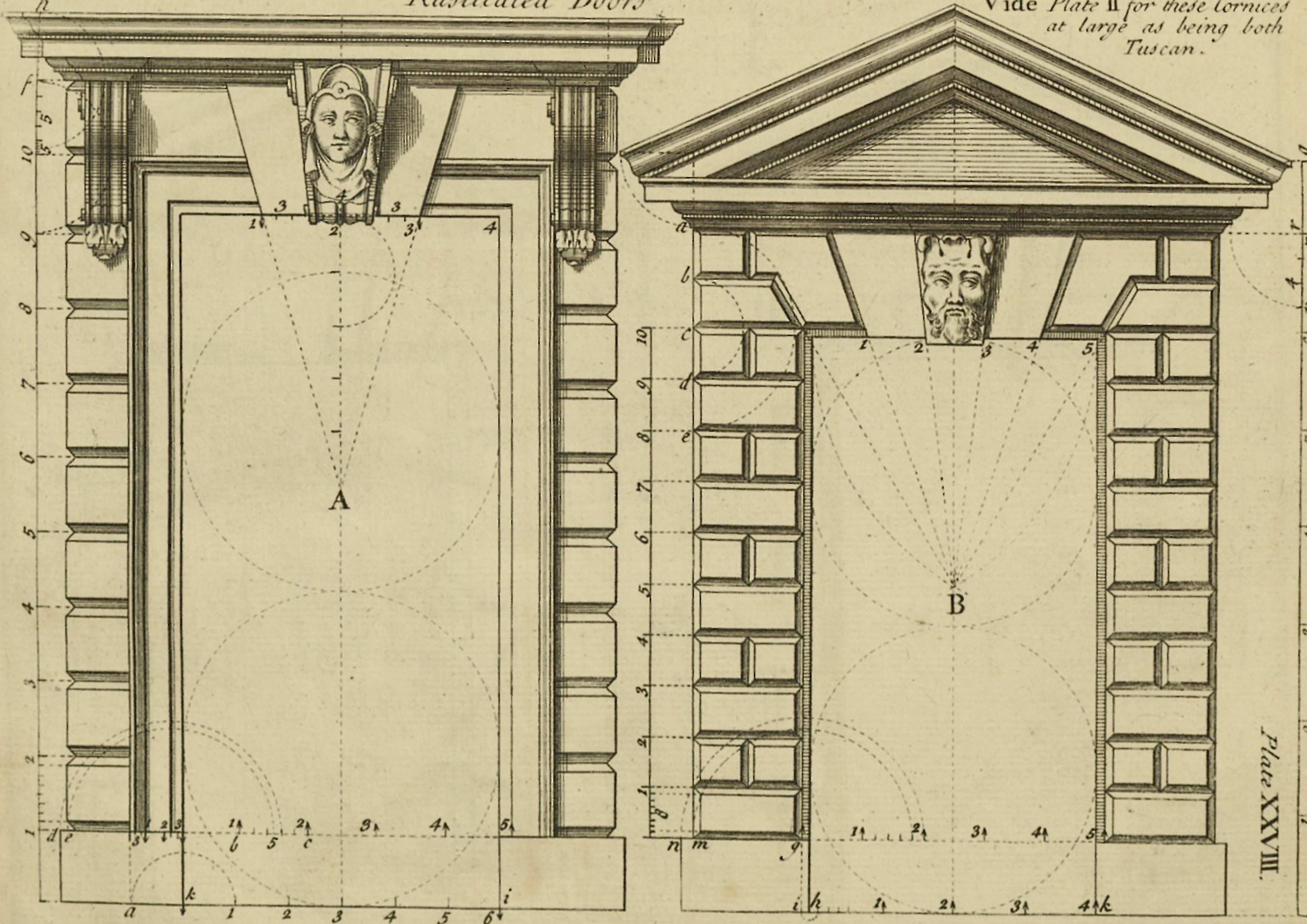
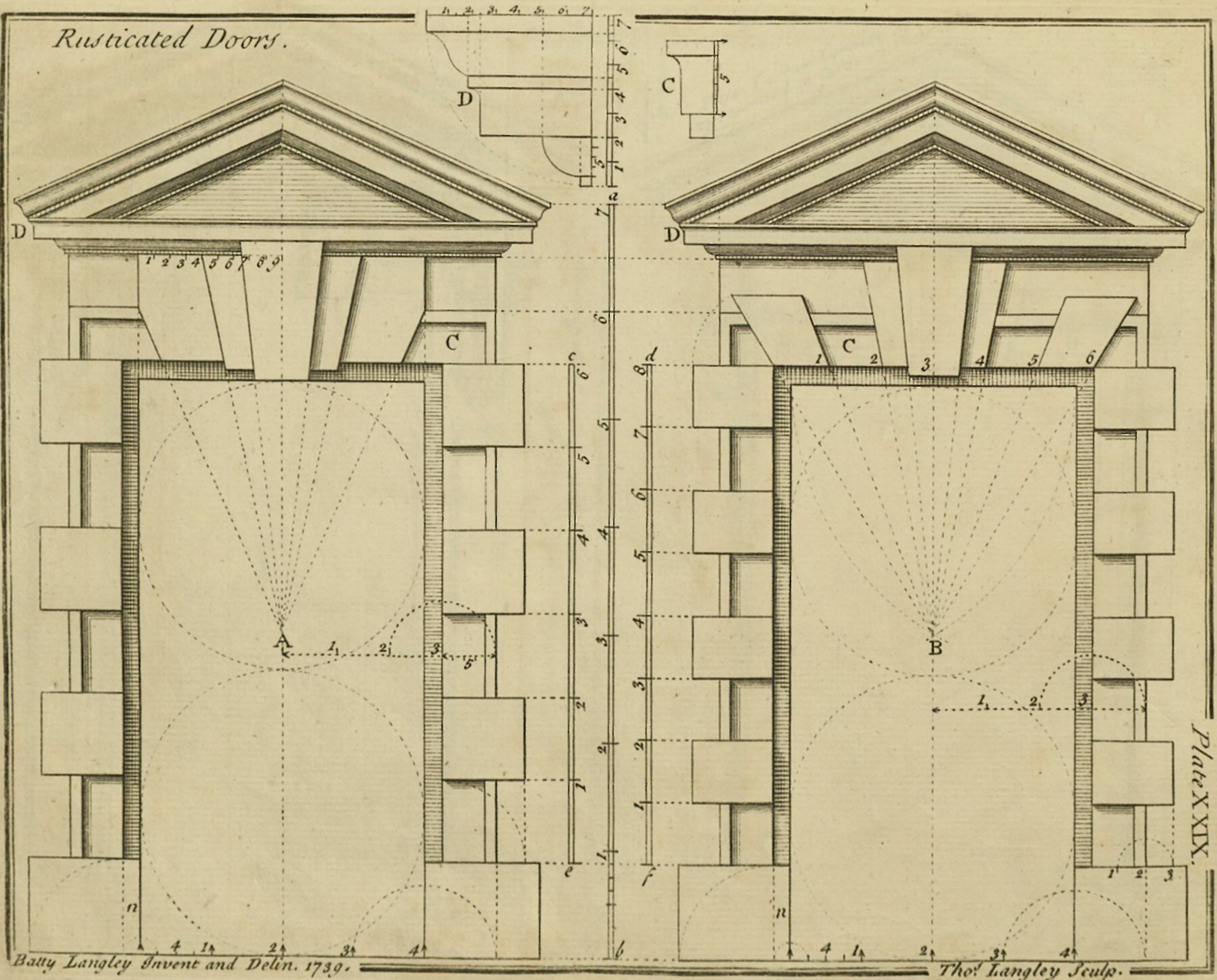

A
B
a
b
c
d
e
f
g
h
i
k
m
n
p
q
r
1
2
3
4
5
6
7
8
9
10

Plate XXVIII.

The Measures Invented Proportioned & Affixed by Batty Langley 1739.

Thoˢ. Langley Delin. & Sculp.

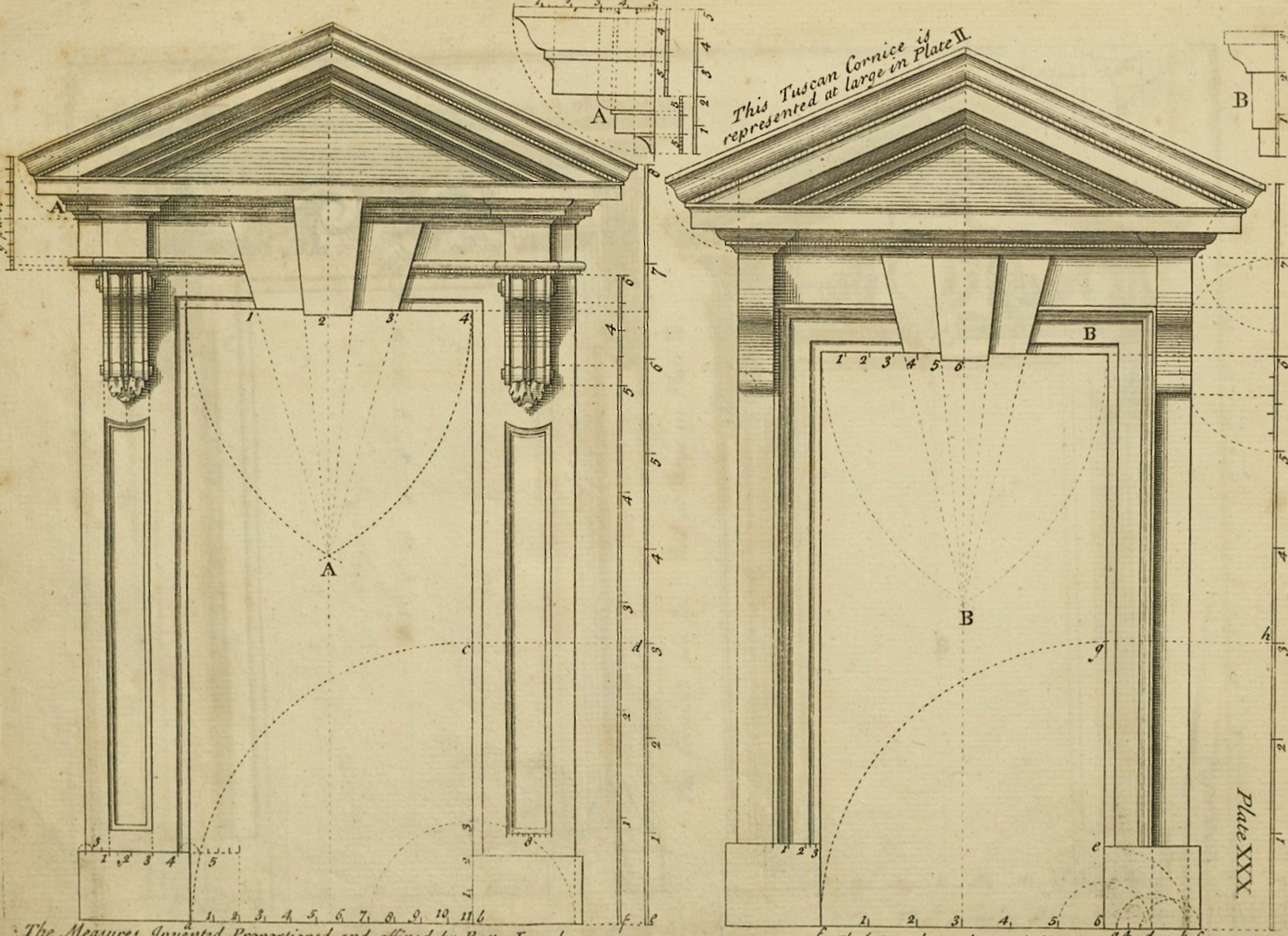
Rusticated Doors.


A
B
C
C
C
D
D
D
a
b
c
d
e
f
n
n
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7
n 2 3 4 5 6 7
1 2 3
1 2 3
1' 2' 3
4 1 2 3 4
5
5
5

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

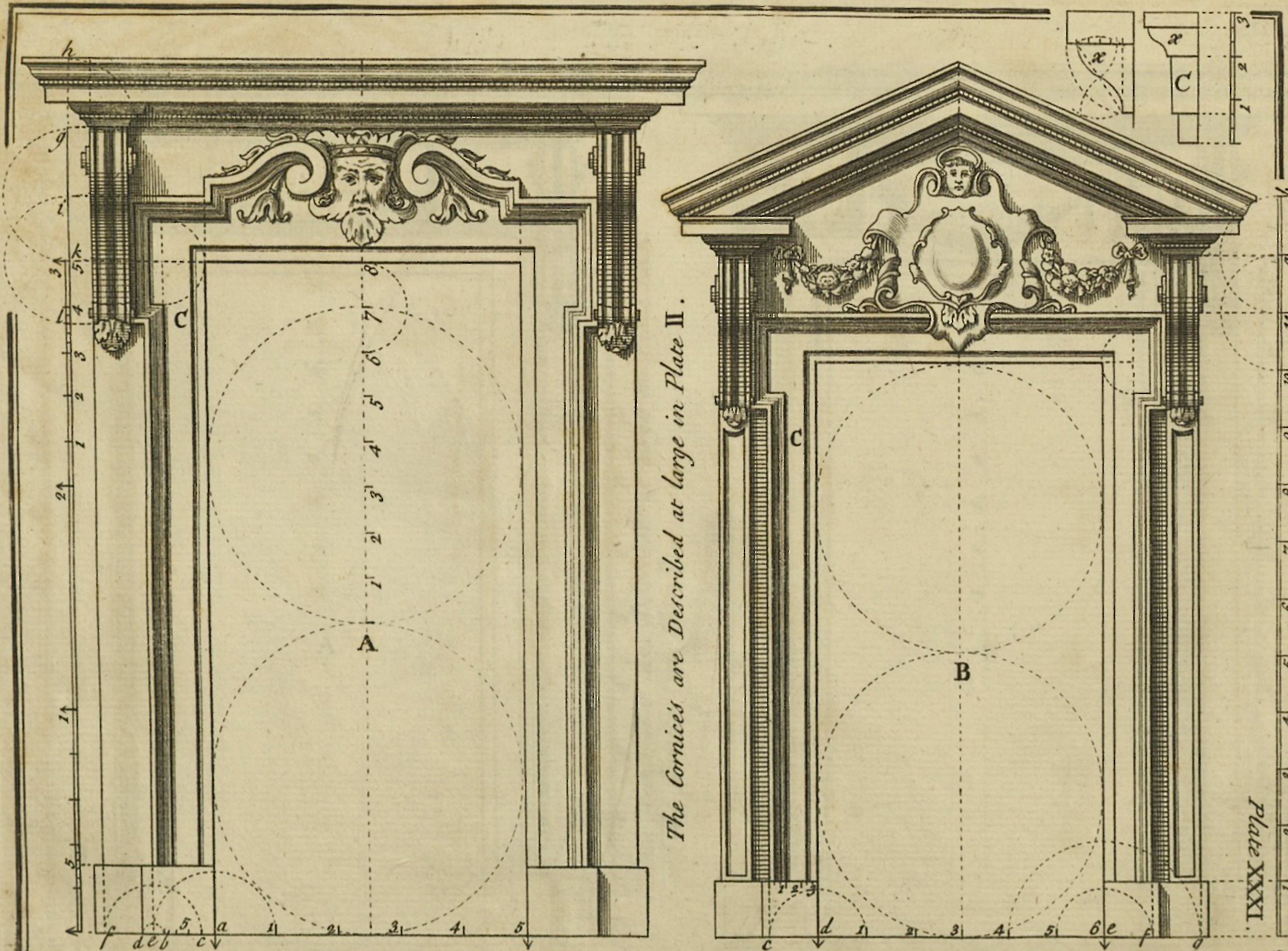
Plate XXX.


This Tuscan Cornice is represented at large in Plate II.
A
B
9 parts
a
b
c
d
e
f
g
h

The Measures Invented, Proportioned and affixed by Batty Langley 1739.

Thoˢ Langley Delin. and Sculp.

Plate XXXI.

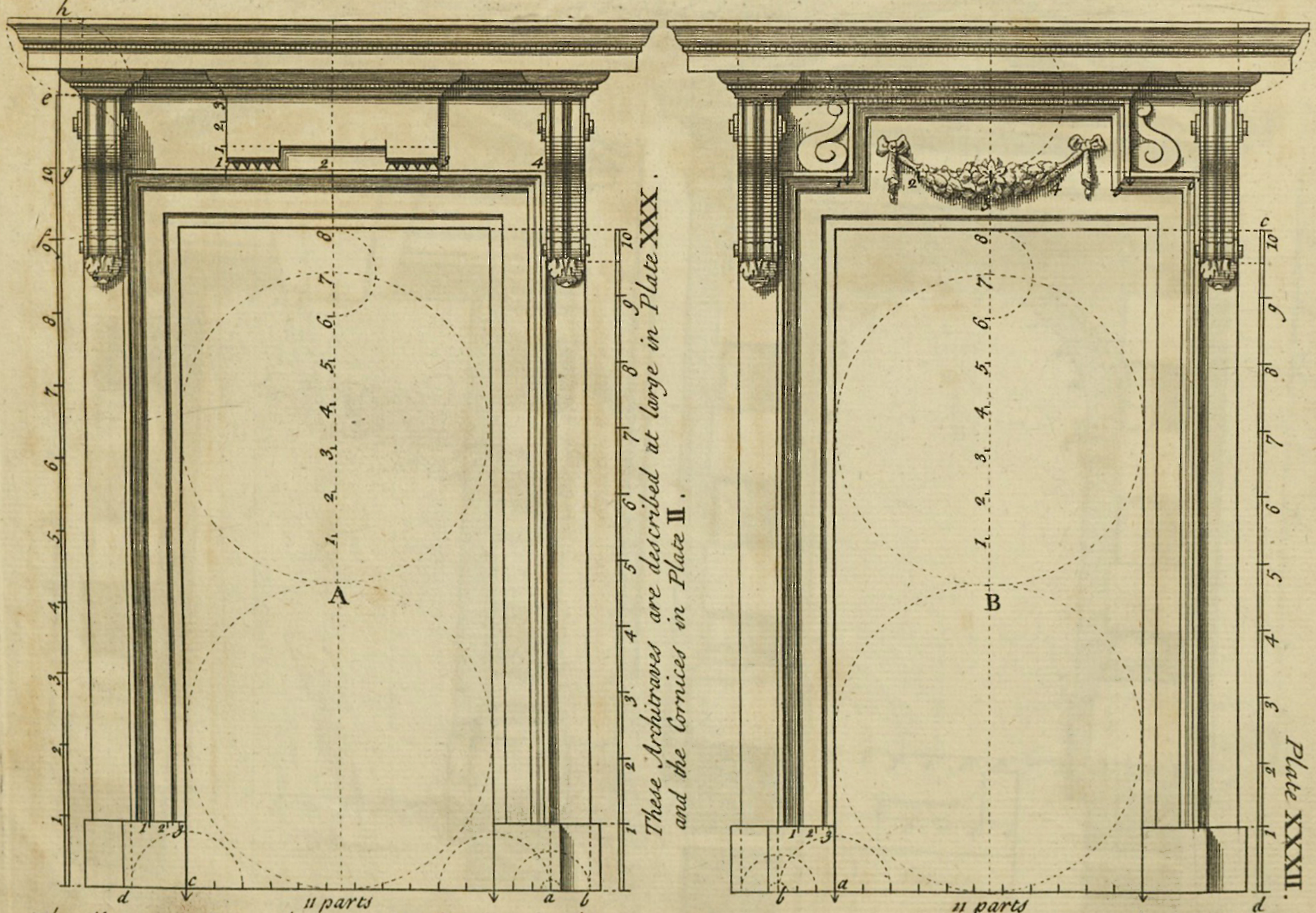

A
B
C
C
C
x
x
h
g
i
k
a b c d e f
1 2 3 4 5 6 7 8 9 10 11

The Cornices are Described at large in Plate II.

The Measures Invented, proportioned and affixed by Batty Langley 1739.

Thoˢ. Langley Delin. and Sculp.

Plate XXXII.



h
e
g
f
d
c
a
b
A
B
11 parts
11 parts
1
2
3
4
5
6
7
8
9
10

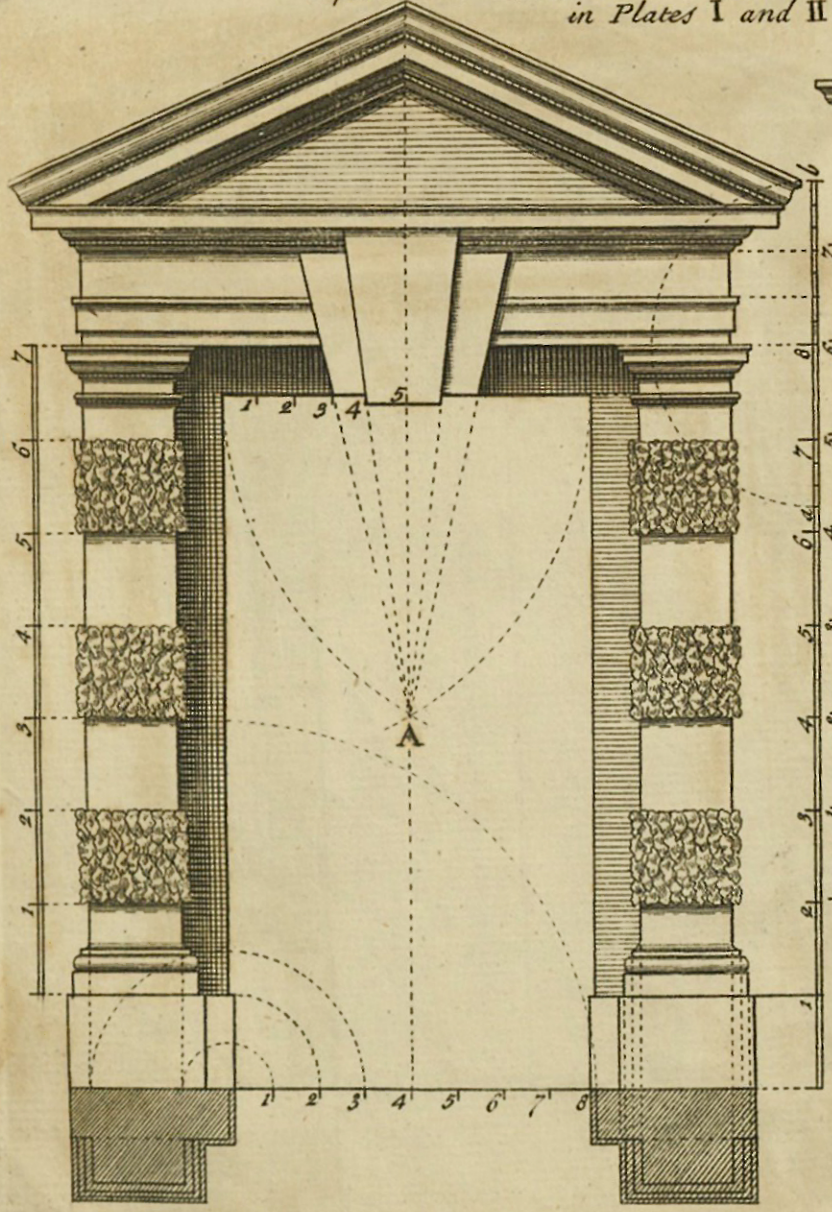
These Architraves are described at large in Plate XXX.
and the Cornices in Plate II.

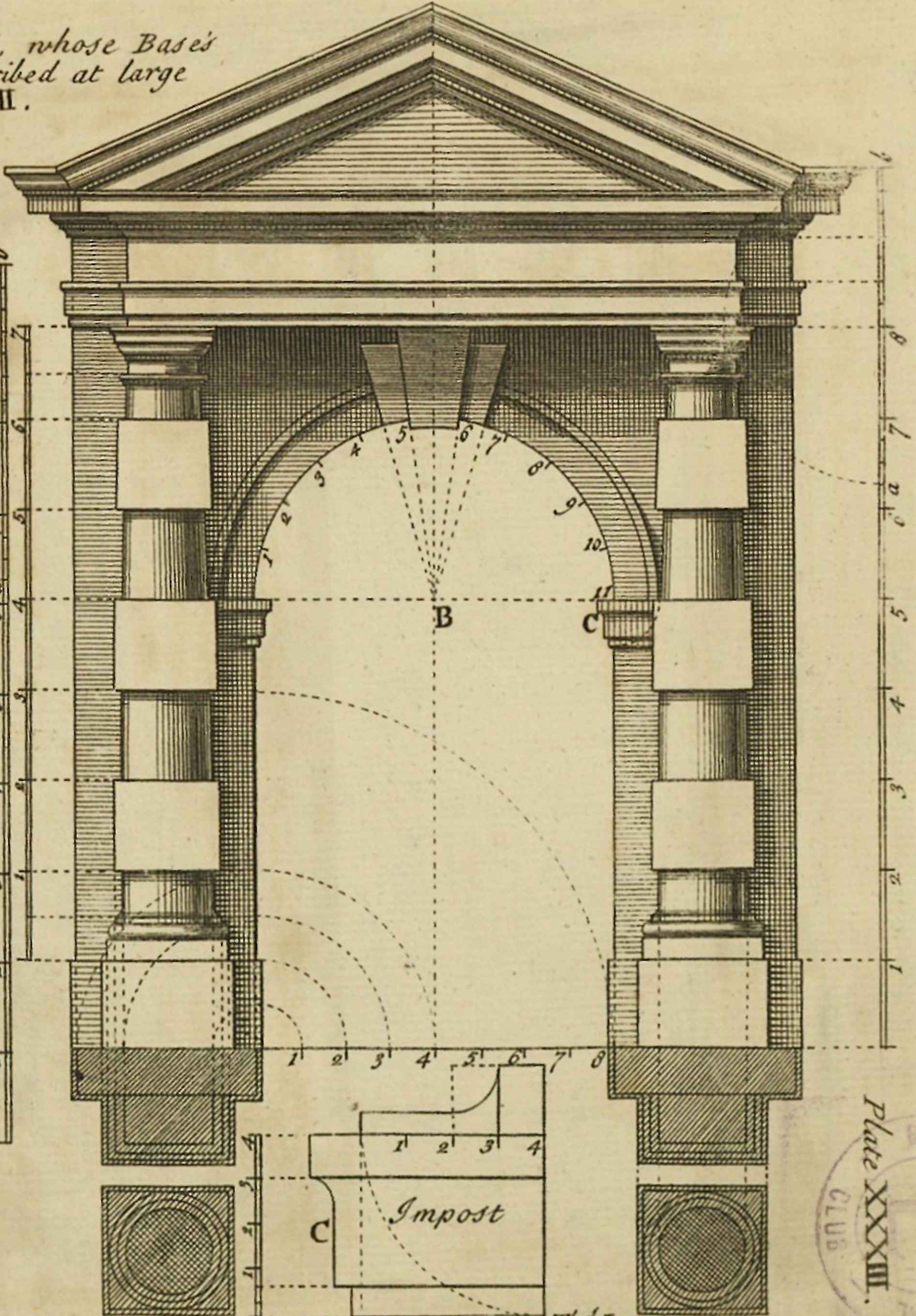
The Measures Invented, proportioned and affixed by Batty Langley 1739.

Thoˢ. Langley Sculp.

Plate XXXIII.

Tuscan Rusticated Doors, whose Base's Capitals and Entablatures are described at large in Plates I and II.





B
C
Impost
C
1
2
3
4
5
6
7
8
9
10
11

Batty Langley Invent and Delin. 1739.

Thoˢ Langley Sculp.

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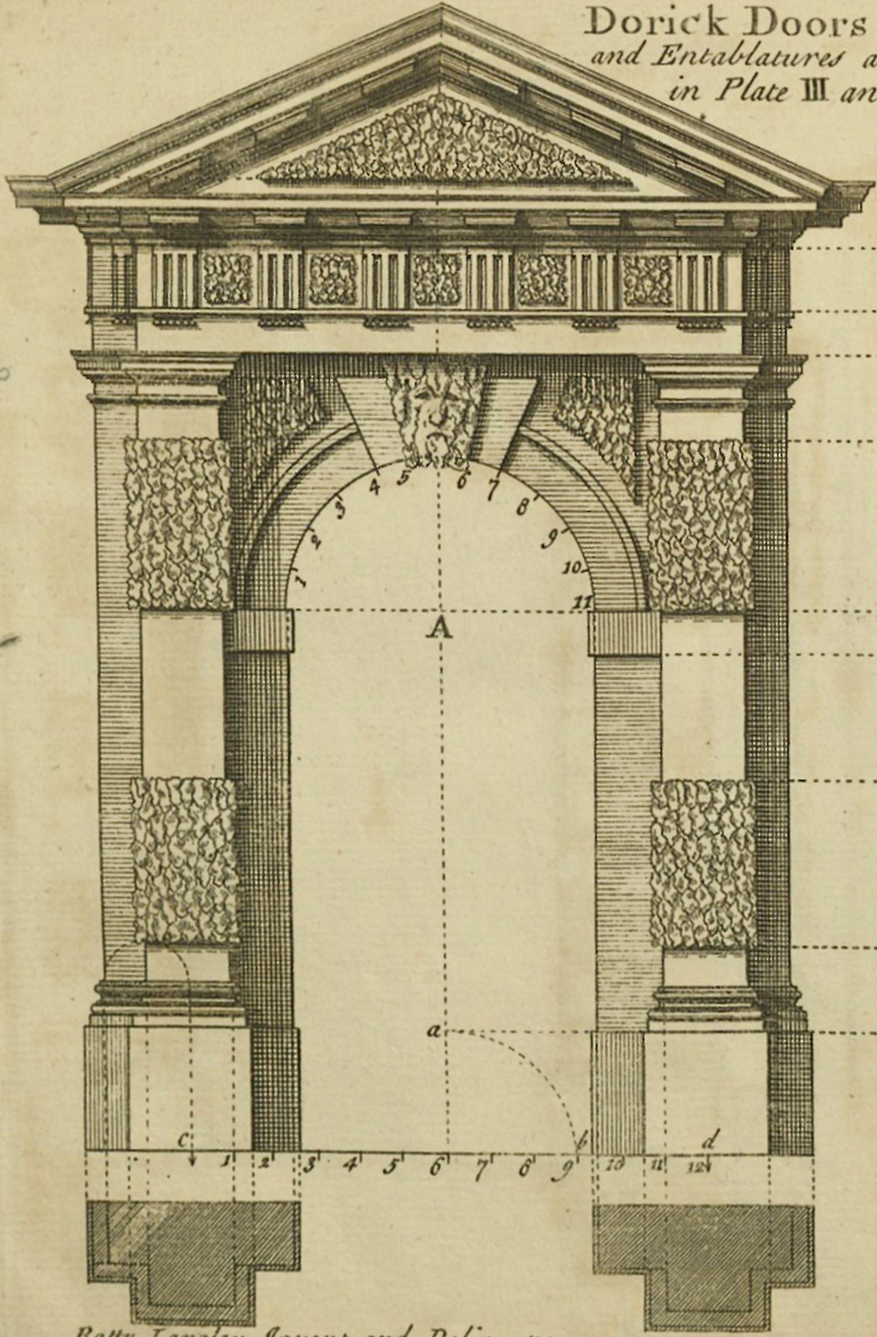
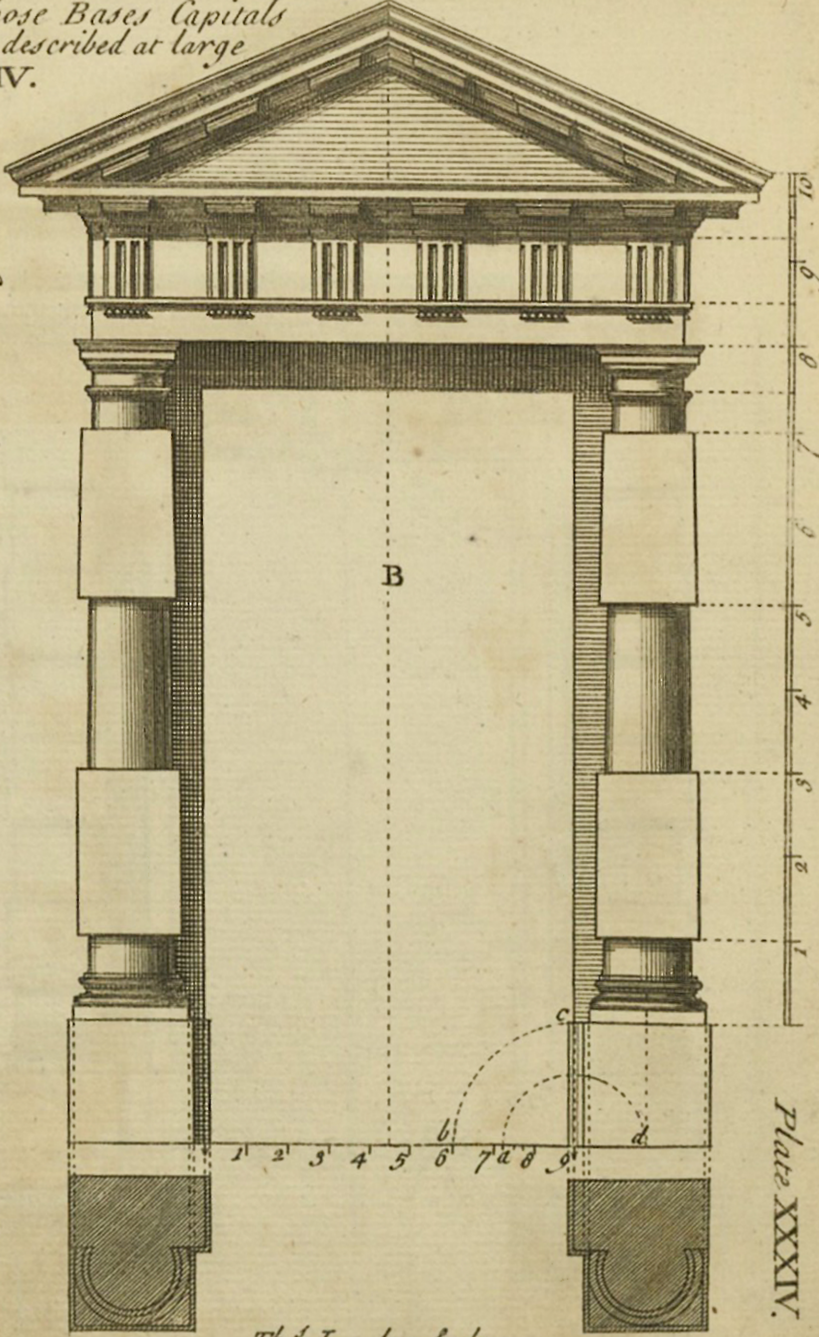
Plate XXXIV.

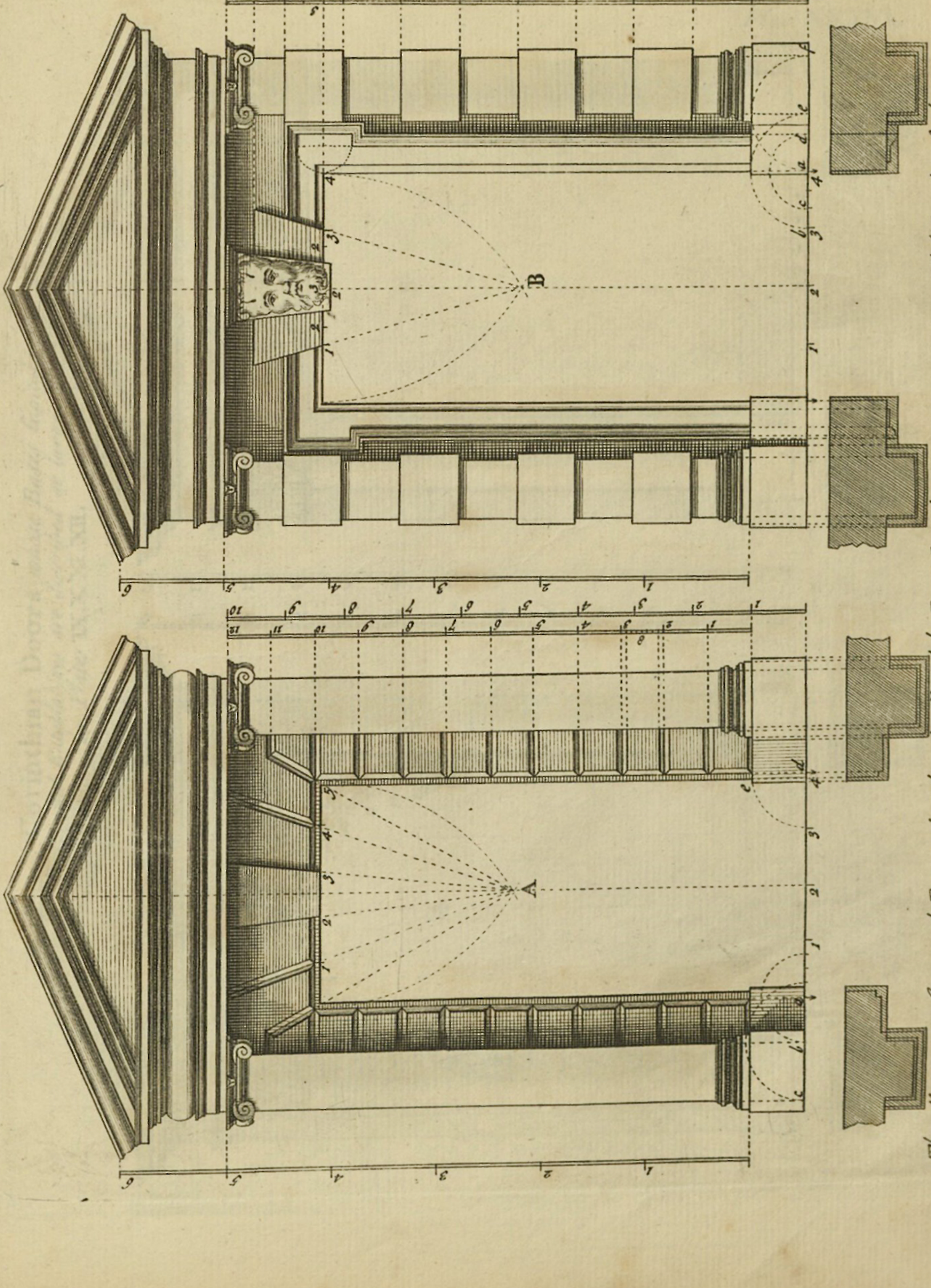
Dorick Doors *whose Bases Capitals and Entablatures are described at large in Plate* III *and* IV.


A
1
2
3
4
5
6
7
8
9
10
11
a
c
d
f
1
2
3
4
5
6
7
8
9
10
11
12
1
2
3
4
5
6
7
8
9
10


B
c
b
a
d
1
2
3
4
5
6
7
8
9
1
2
3
4
5
6
7
8
9
10

Batty Langley Invent and Delin. 1739.

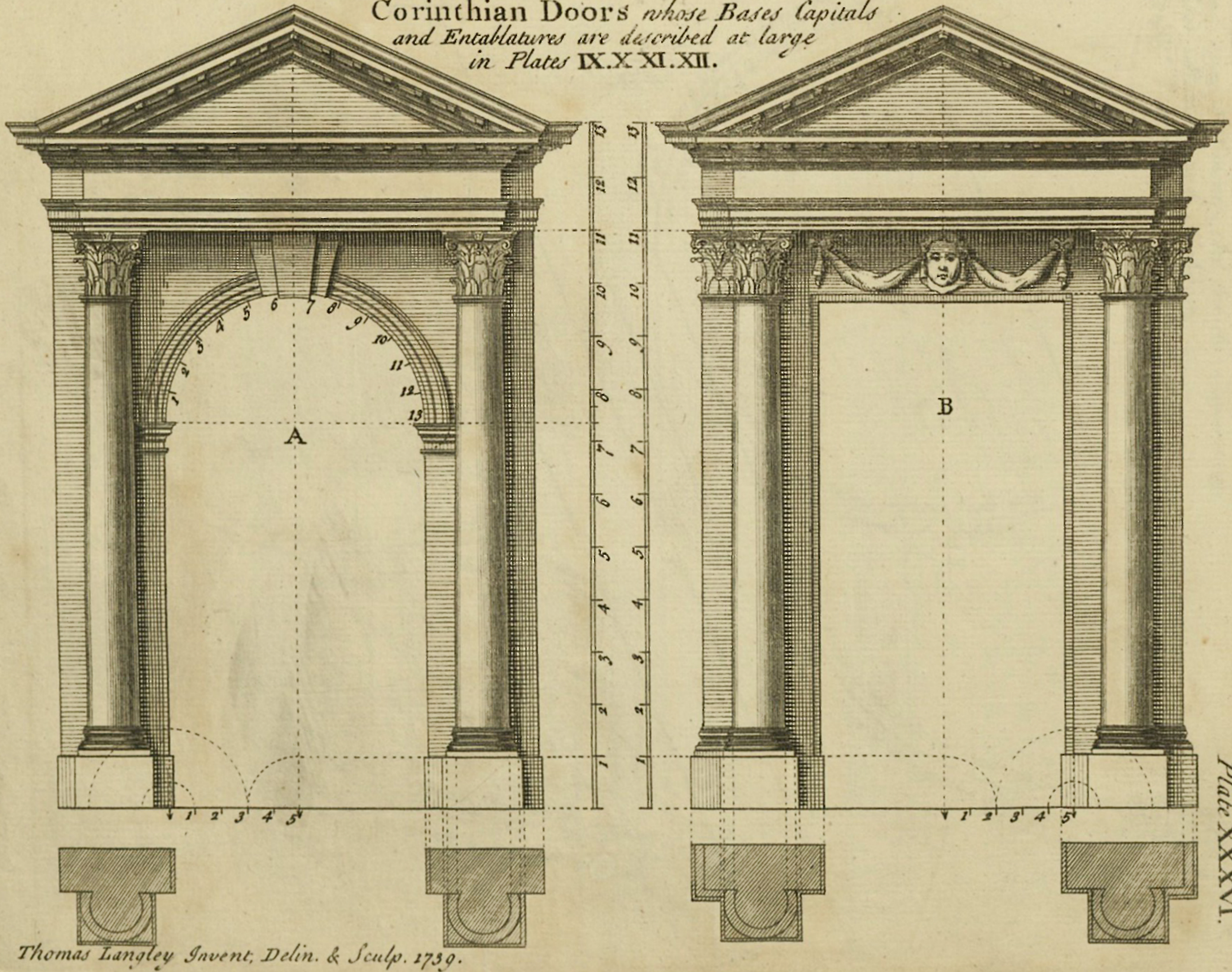
Thoˢ. Langley Sculp.


A
B
1
2
3
4
5
6
7
8
9
10
11
12
a
b
c
d
e
f

Thos. Langley Sculp.

The Measures Invented Proportioned and affixed by Batty Langley 1739.

Corinthian Doors *whose Bases Capitals and Entablatures are described at large in Plates* IX.X.XI.XII.


A
1 2 3 4 5 6 7 8 9 10 11 12 13
1 2 3 4 5
B
1 2 3 4 5
1 2 3 4 5 6 7 8 9 10 11 12 13
1 2 3 4 5 6 7 8 9 10 11 12 13

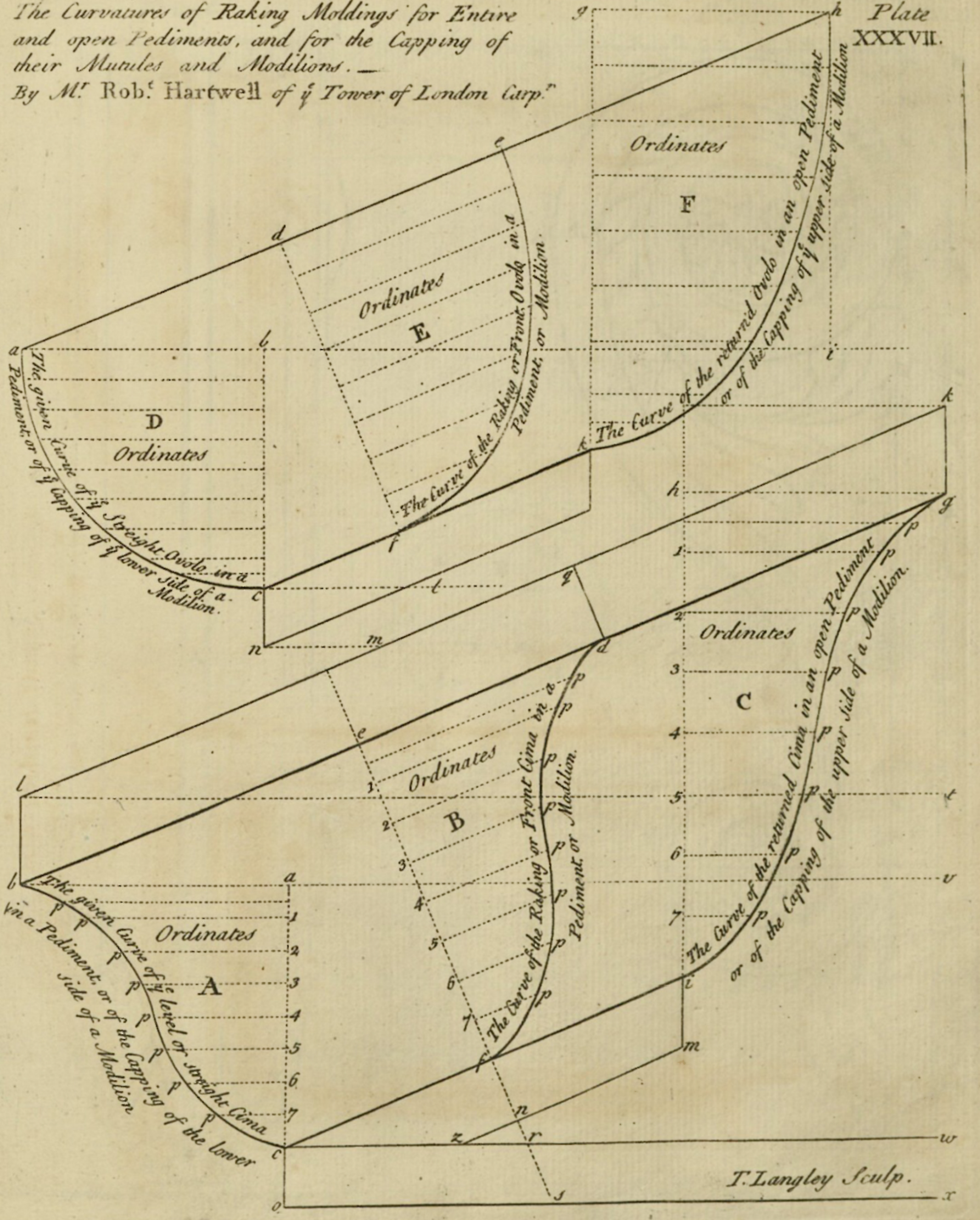
Thomas Langley Invent, Delin. & Sculp. 1739.

Plate XXXVI.

The Curvatures of Raking Moldings for Entire and open Pediments, and for the Capping of their Mutules and Modilions.

By Mr. Robt. Hartwell of ye Tower of London Carpr.

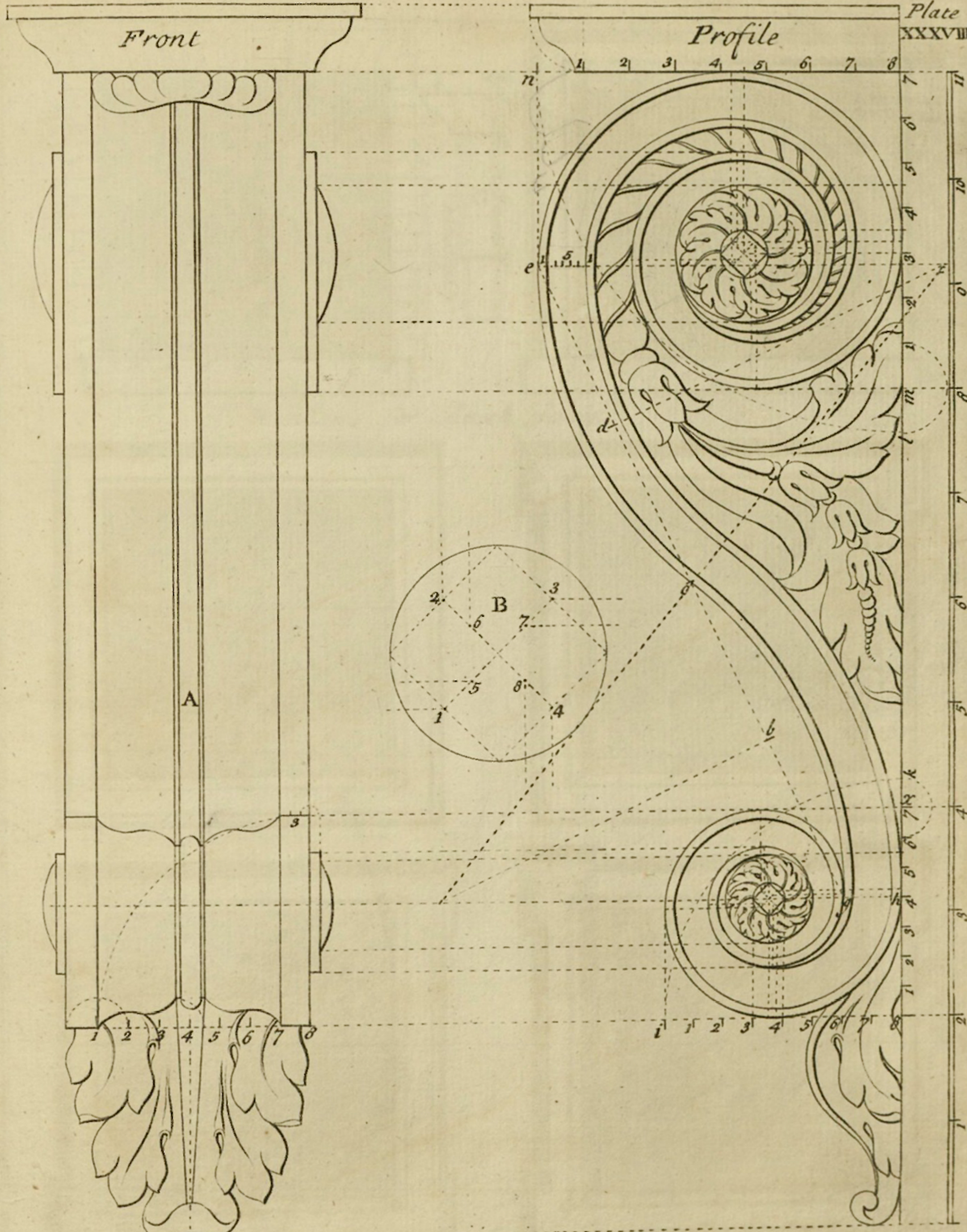
Plate XXXVII.



g
h
e
d
Ordinates
F
Ordinates
E
a
b
i
D
Ordinates
The given Curve of ye Streight Ovolo in a Pediment, or of ye Capping of ye lower Side of a Modilion.
The Curve of the Raking or Front Ovolo in a Pediment, or Modilion.
The Curve of the returned Ovolo in an open Pediment or of the Capping of ye upper Side of a Modilion
k
h
g
f
c
t
q
n
m
d
1
2
3
4
5
6
7
Ordinates
C
e
Ordinates
B
l
t
b
a
v
A
Ordinates
p
The given Curve of ye level or straight Cima in a Pediment, or of the Capping of the lower side of a Modilion
The Curve of the Raking or Front Cima in a Pediment or Modilion.
The Curve of the returned Cima in an open Pediment or of the Capping of the upper Side of a Modilion.
i
m
f
n
z
r
w
c
s
o
x

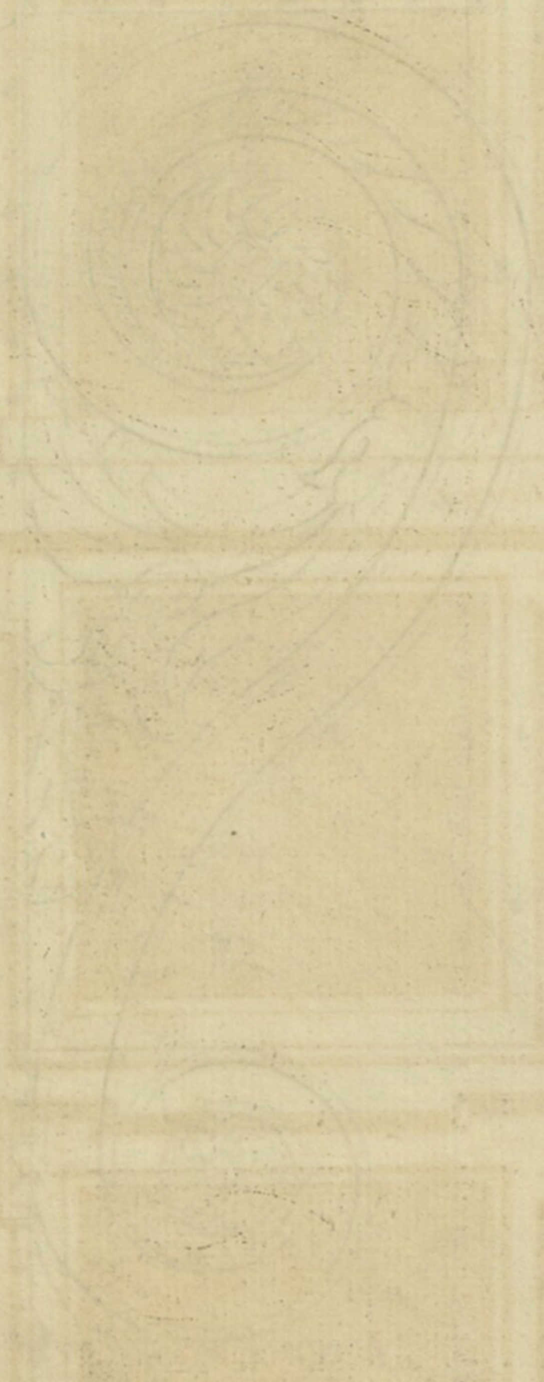
T. Langley Sculp.

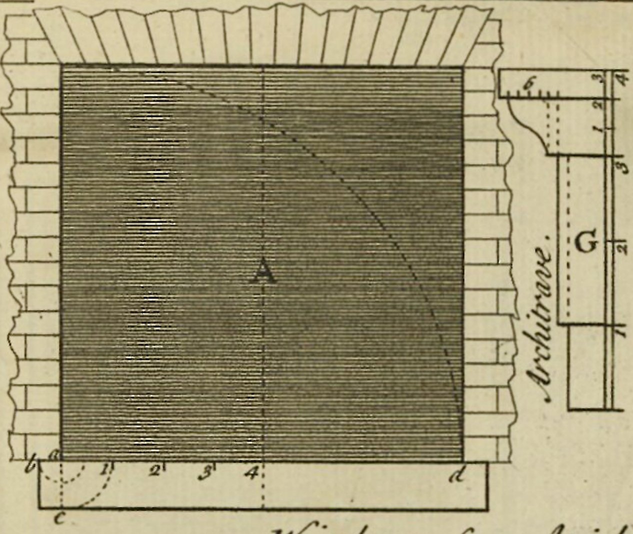
Plate XXXVIII.

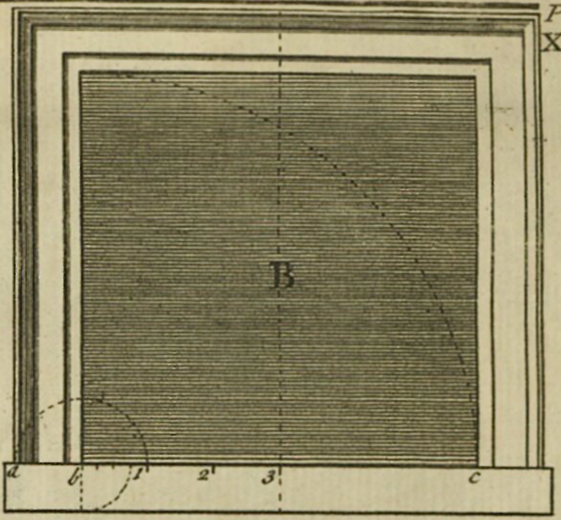


Front
Profile
A
B
n
e
d
b
i
k
l
m

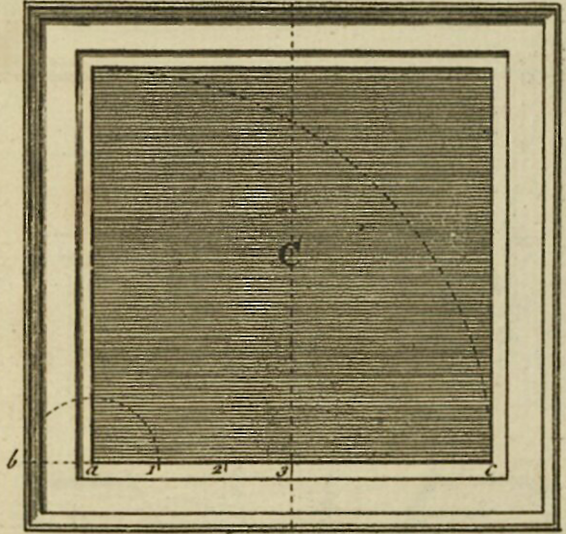
Thoˢ Langley Delin. and Sculp. 1739.

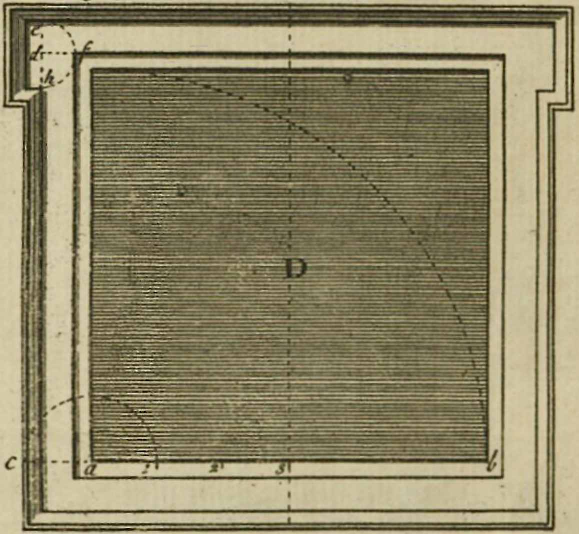


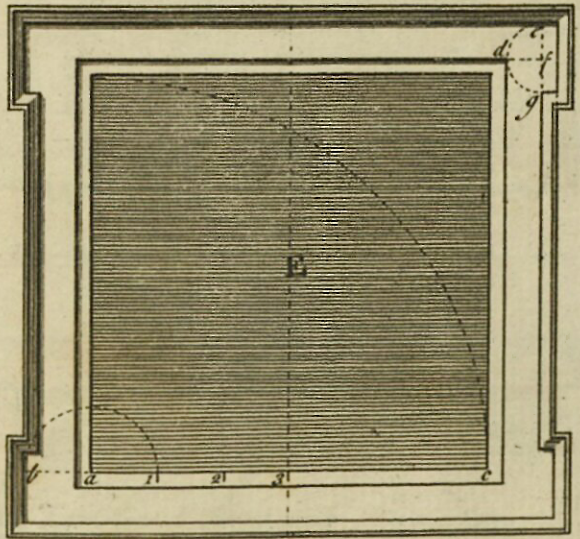

A
b
a
1
2
3
4
d
c
b
4
3
2
1
3
2
1
G
Architrave.

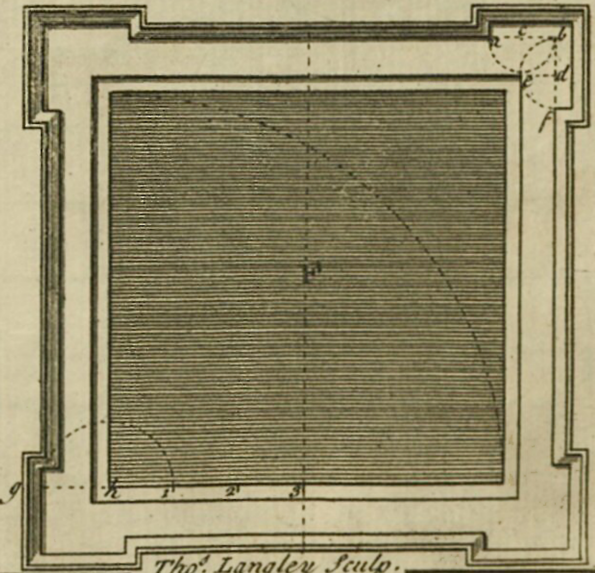


Windows for Attick Story's.




e
d
f
h
D
c
a
1
2
3
b


d
e
f
g
E
b
a
1
2
3
c

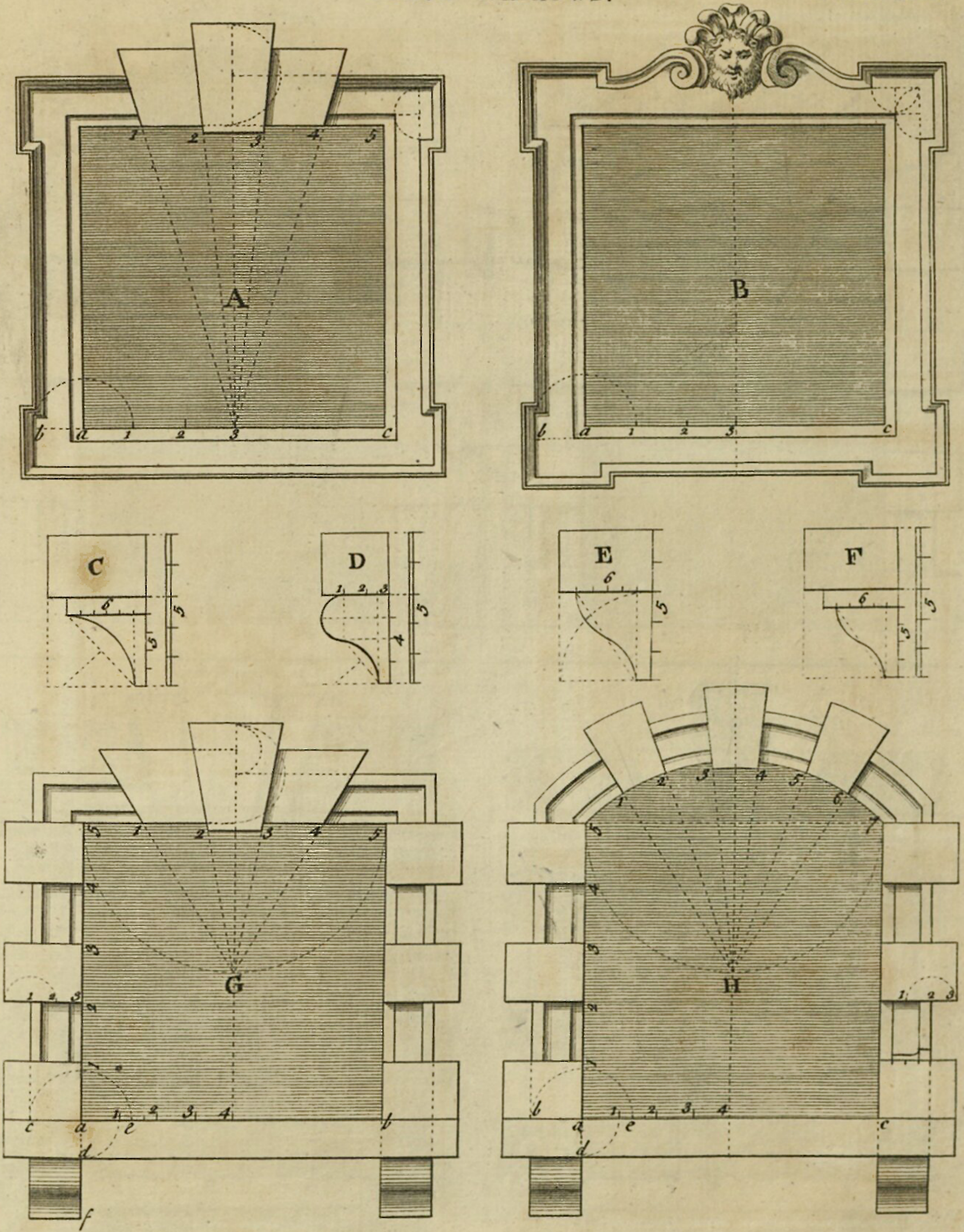

n
c
b
e
d
f
F
g
h
1
2
3

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Attick Windows.

Plate XL.

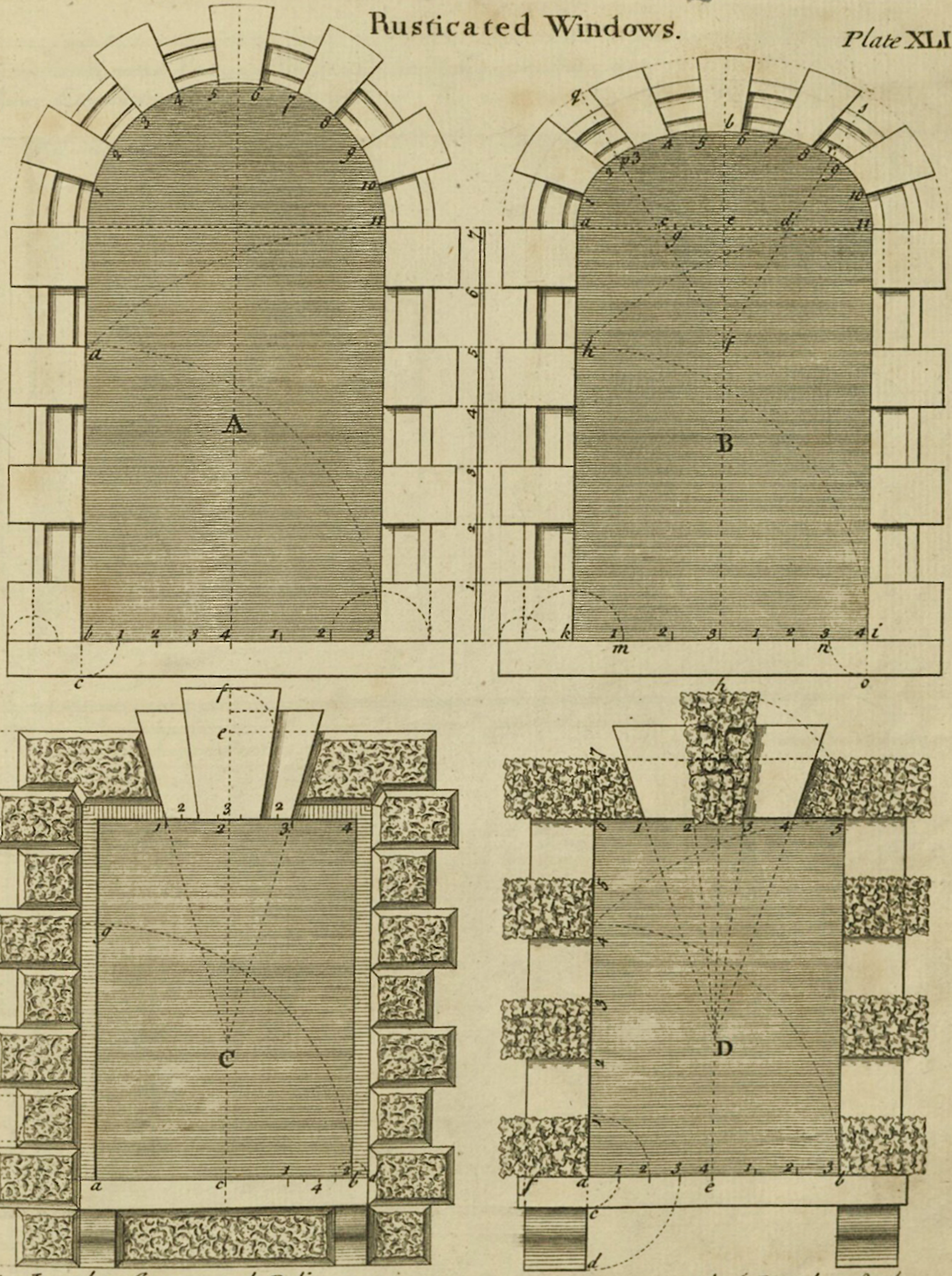

A
1 2 3 4 5
b a 1 2 3 c
B
b a 1 2 3 c
C
6
5
5
D
1 2 3
4
5
E
6
5
F
6
5
5
G
5 1 2 3 4 5
4
3
1 2 3
2
1
c a e 1 2 3 4 b
d
f
H
1 2 3 4 5 6 7
5
4
3
1 2 3
2
1
b a e 1 2 3 4 c
d

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

Rusticated Windows.

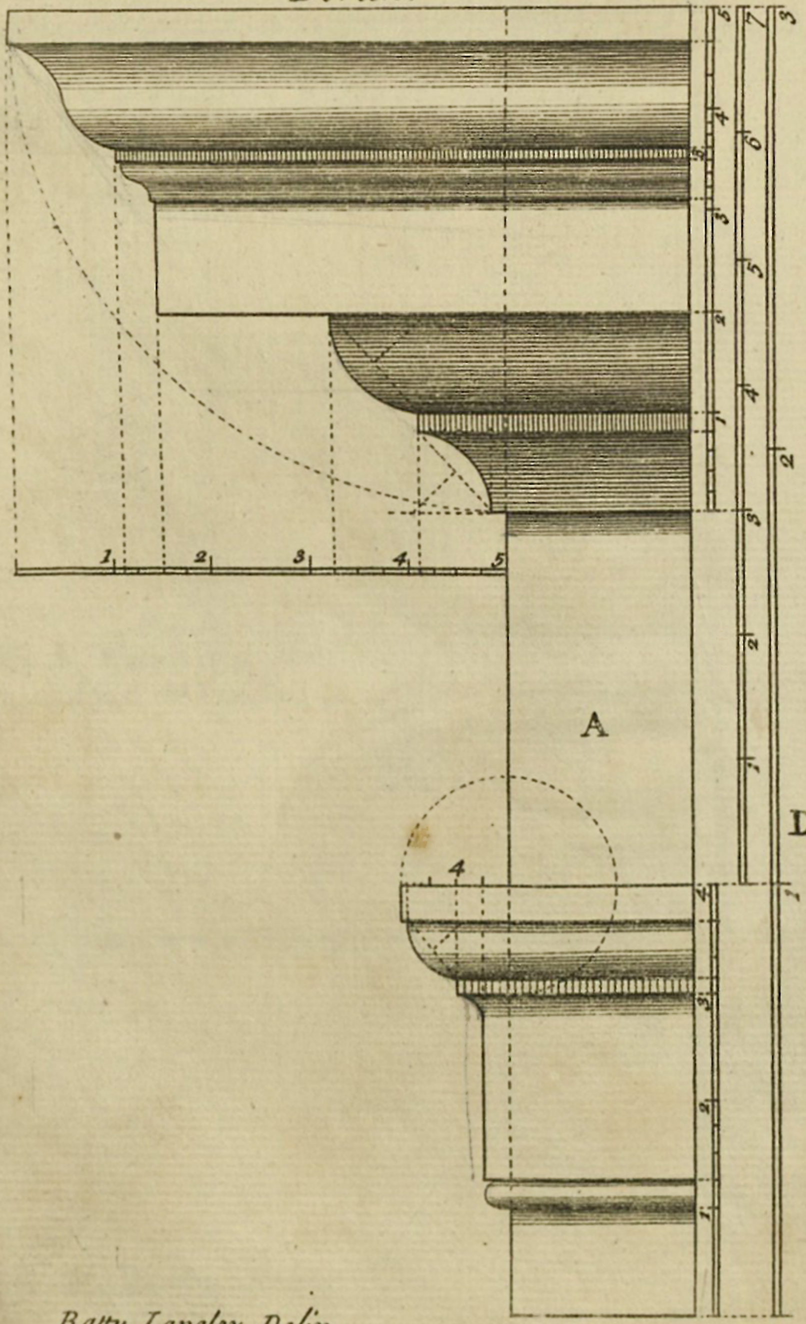
Plate XLI.


A
B
C
D
1
2
3
4
5
6
7
8
9
10
11
a
b
c
d
e
f
g
h
i
k
m
n
o
p
q
r
s

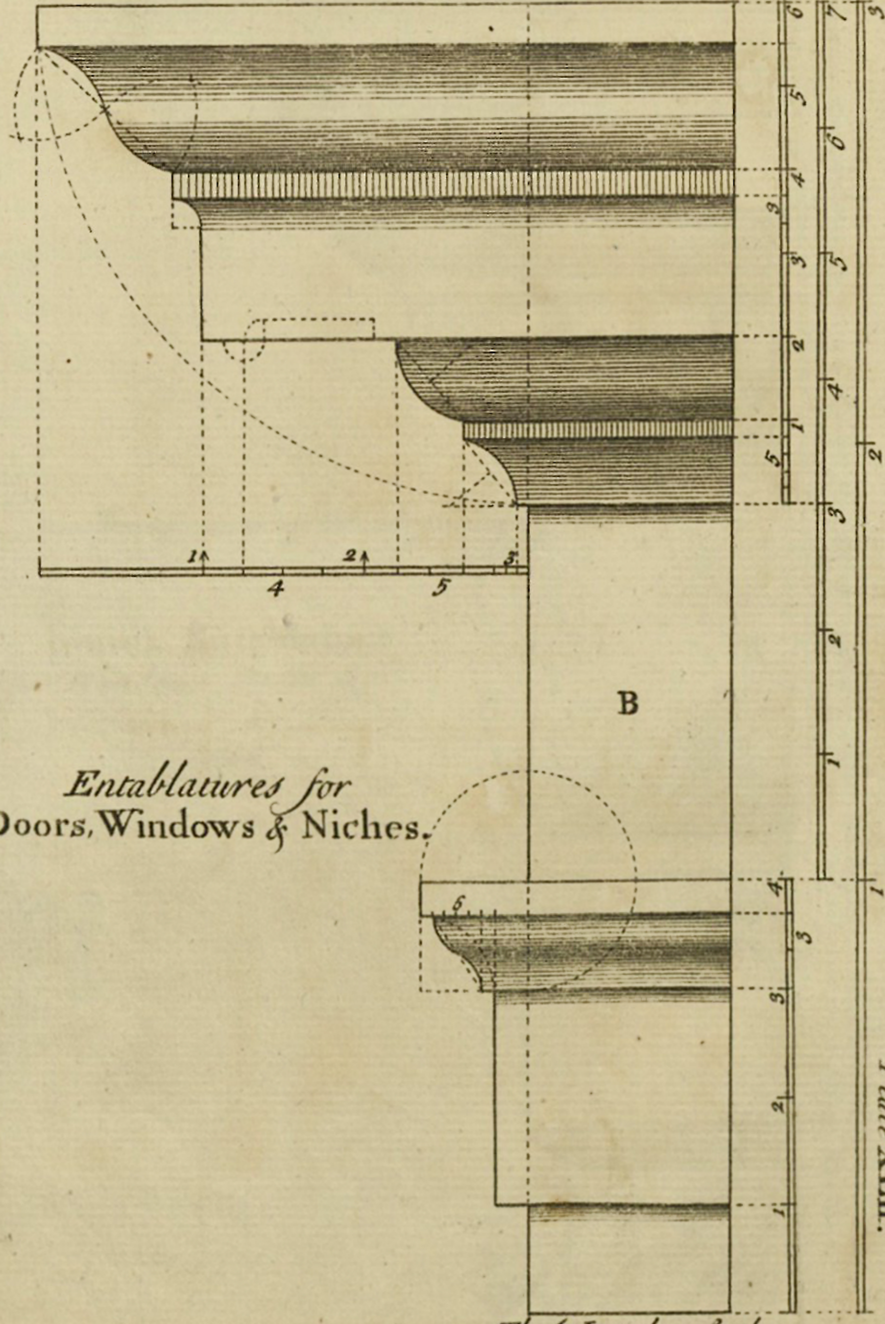
Batty Langley Invent and Delin. 1739. *Thos. Langley Sculp.*

Entablatures for Doors, Windows & Niches.

Dorick.



Tuscan.

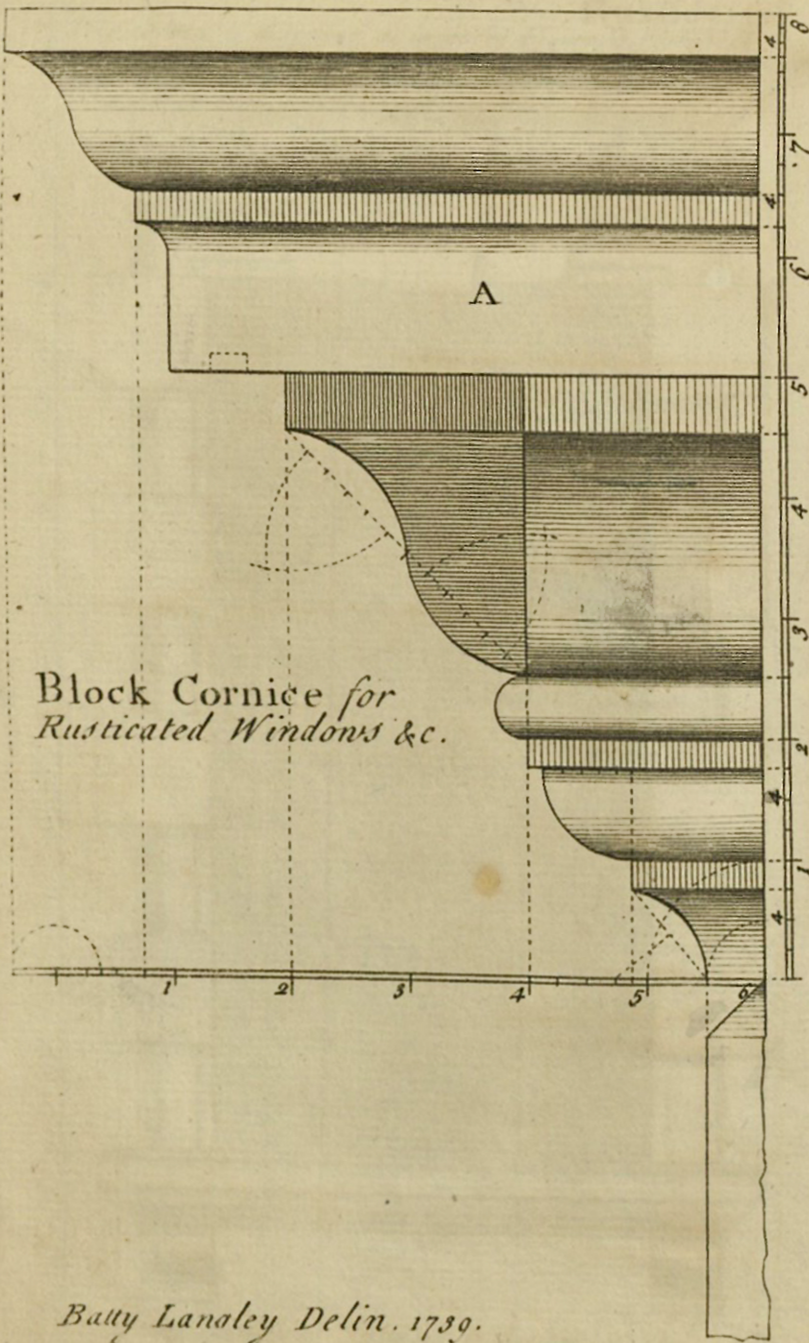


Batty Langley Delin.

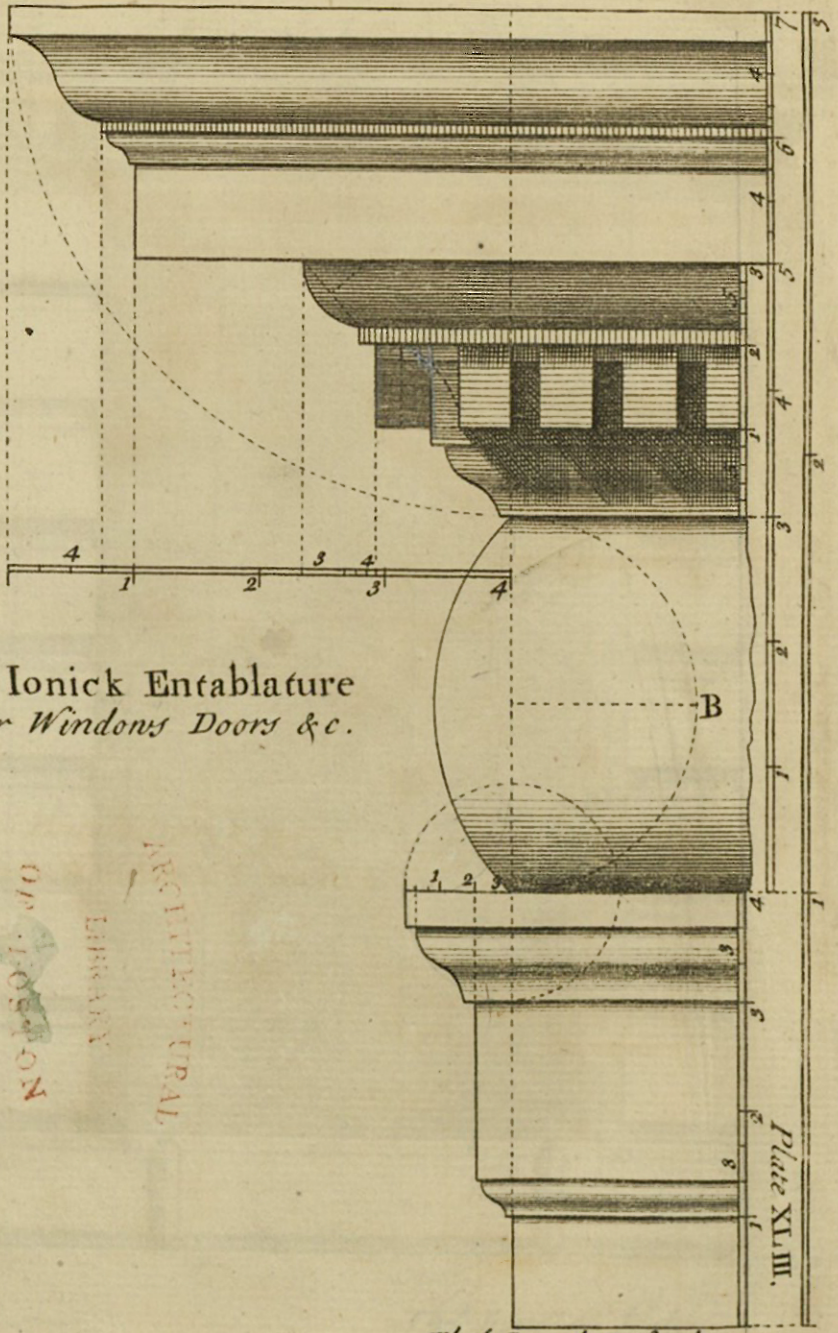
Thoˢ Langley Sculp.

Plate XLII.

Plate XLIII.



Block Cornice *for Rusticated Windows &c.*



Ionick Entablature *for Windows Doors &c.*

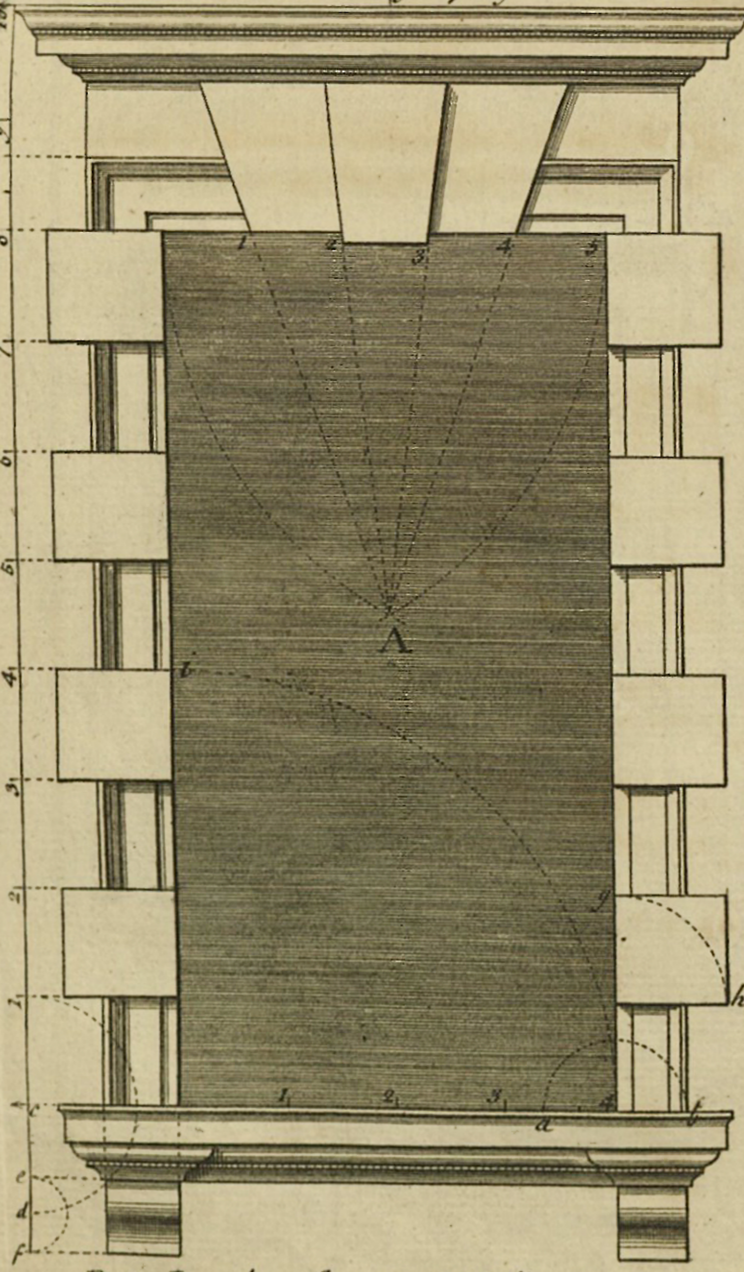
Batty Langley Delin. 1739.

Thos. Langley Sculp.

ARCHITECTURAL LIBRARY OF BOSTON

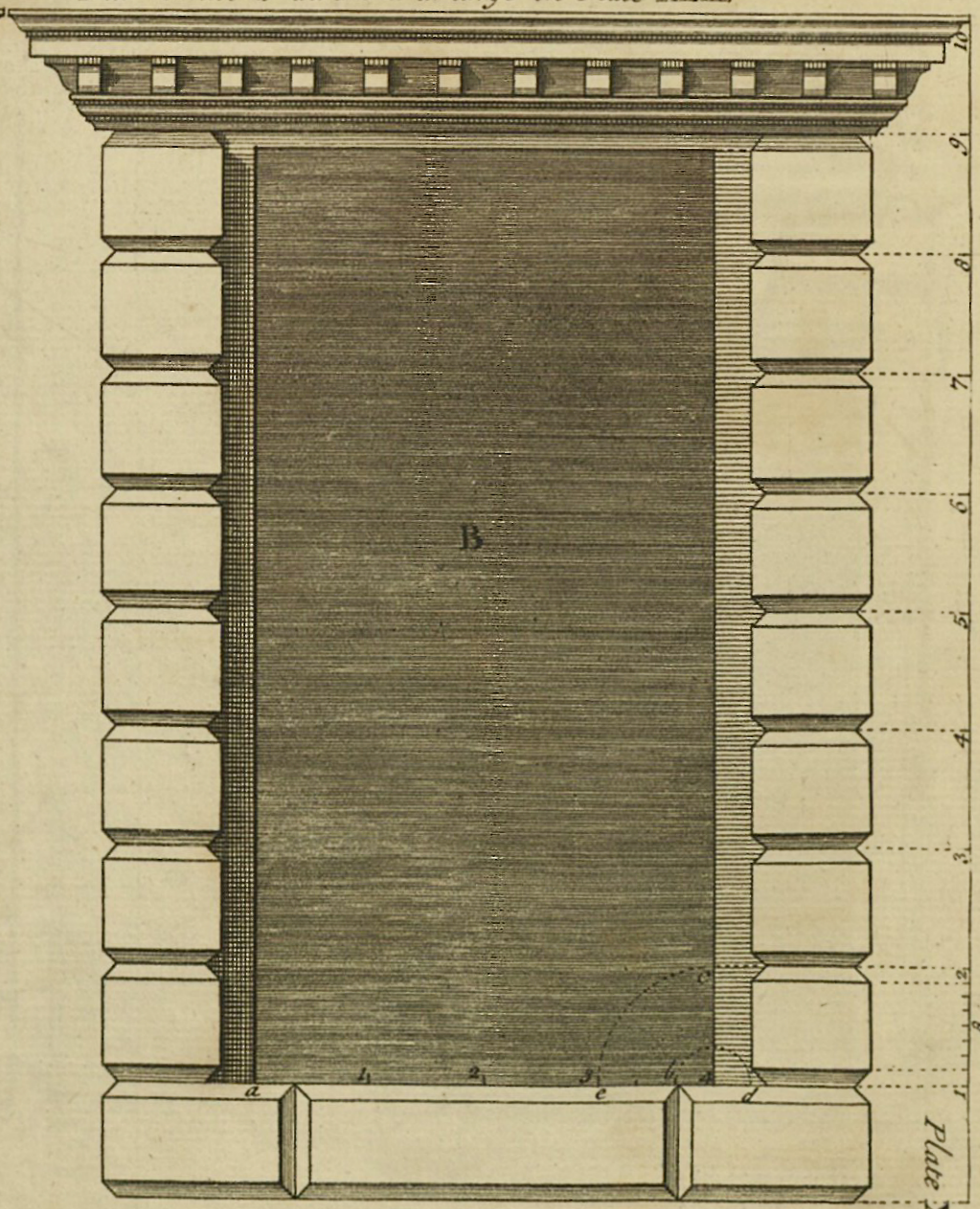
Rusticated Windows.

This Cornice is described at large by Figure B. Plate XLII.



A
1
2
3
4
5
a
b
c
d
e
f
g
h
i
1
2
3
4
5
6
7
8
9
10

This Cornice is described at large in Plate XLIII.



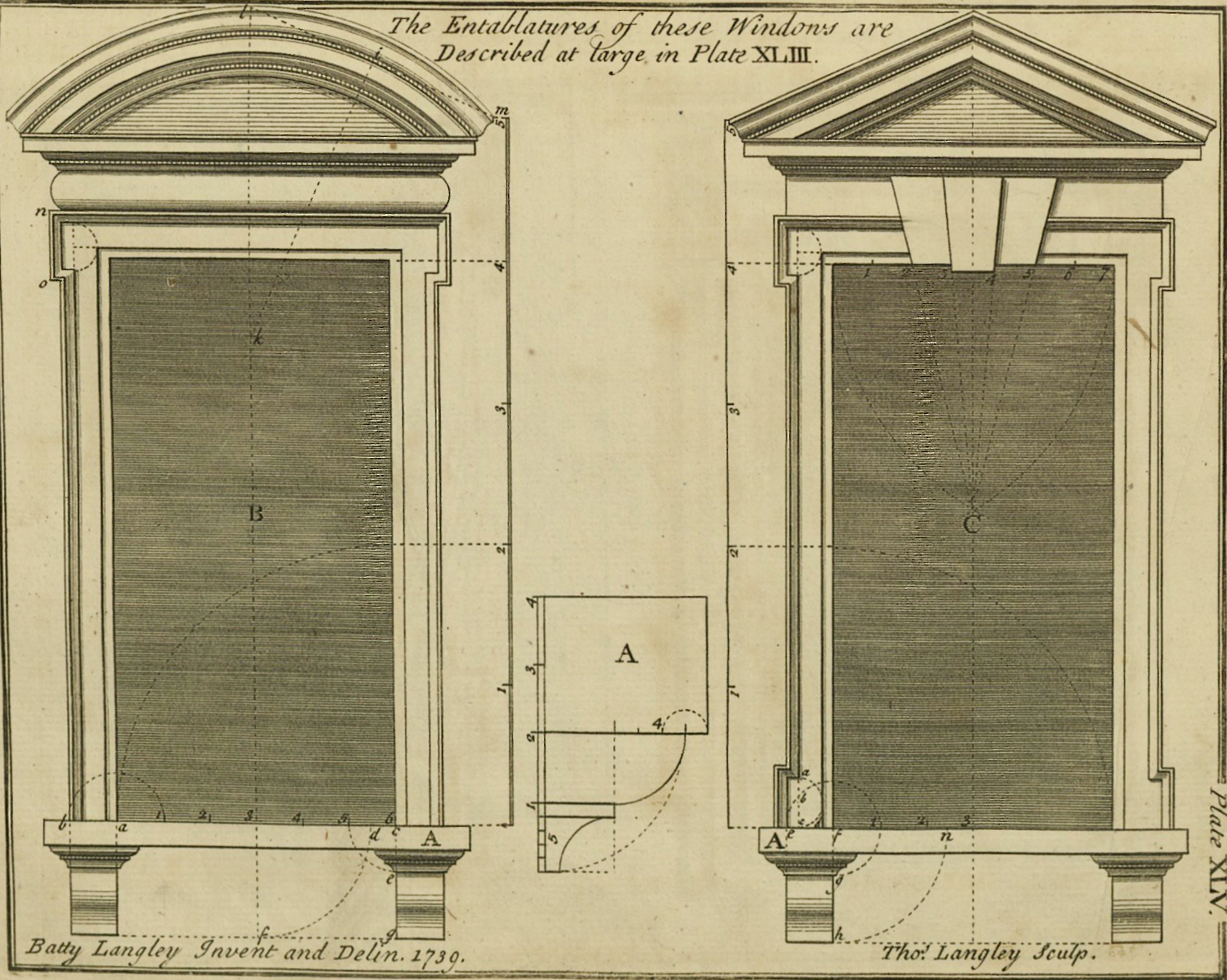
B
a
b
c
d
e
1
2
3
4
5
6
7
8
9
10

Batty Langley Invent & Delin. 1739.

Thoˢ. Langley Sculp.

Plate XLIV.

The Entablatures of these Windows are
Described at large in Plate XLIII.


l
i
m
5
n
o
4
k
B
3
2
1
b
a
1
2
3
4
5
6
d
c
A
e
f
g
A
4
3
2
1
5
4
5
4
3
2
1
7
6
5
C
a
b
A
e
f
1
2
3
n
g
h

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

These Entablature's are described at large by Figure A. Plate XLII.

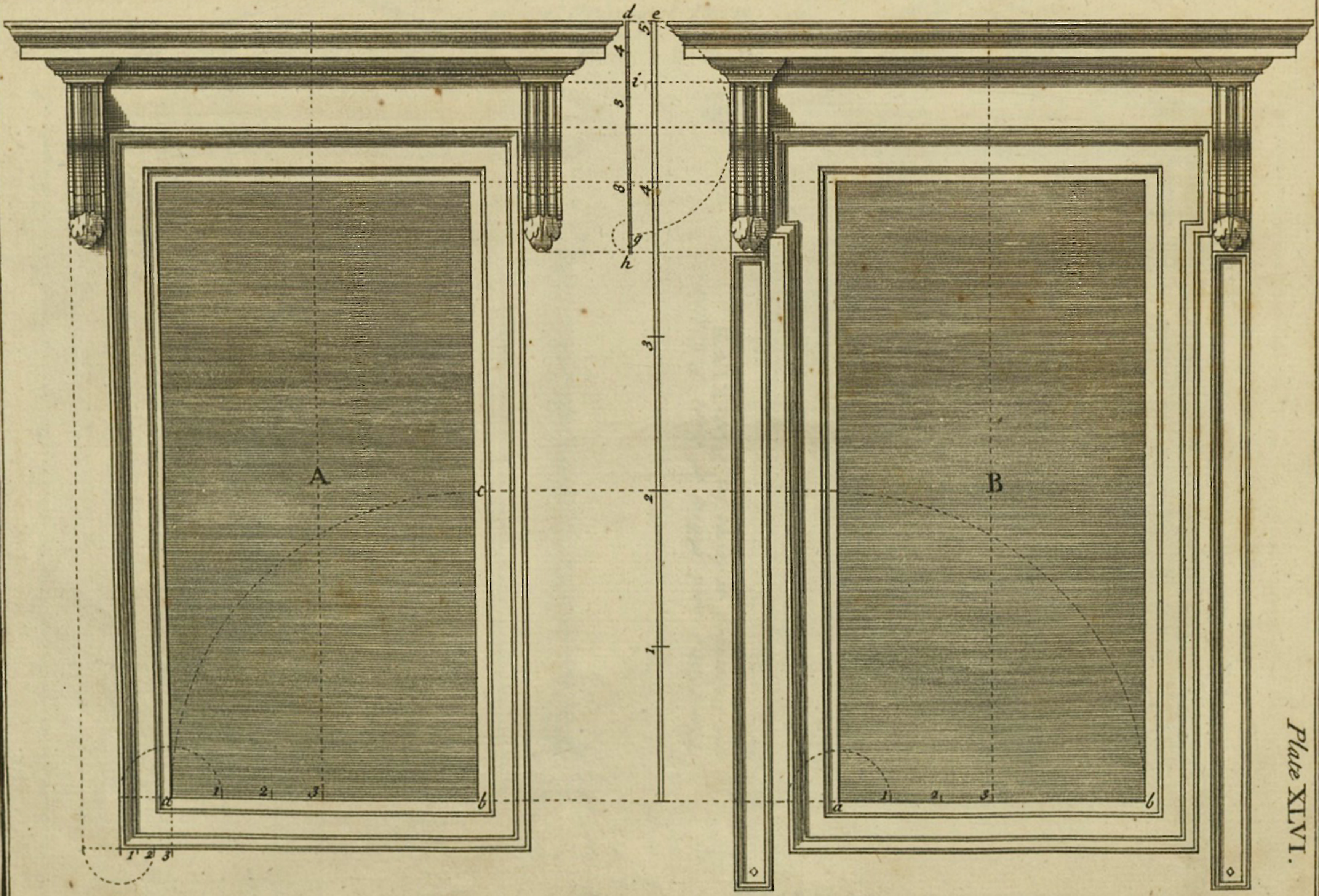

A
B
a
b
c
d
e
g
h
i
1
2
3
4
5
6

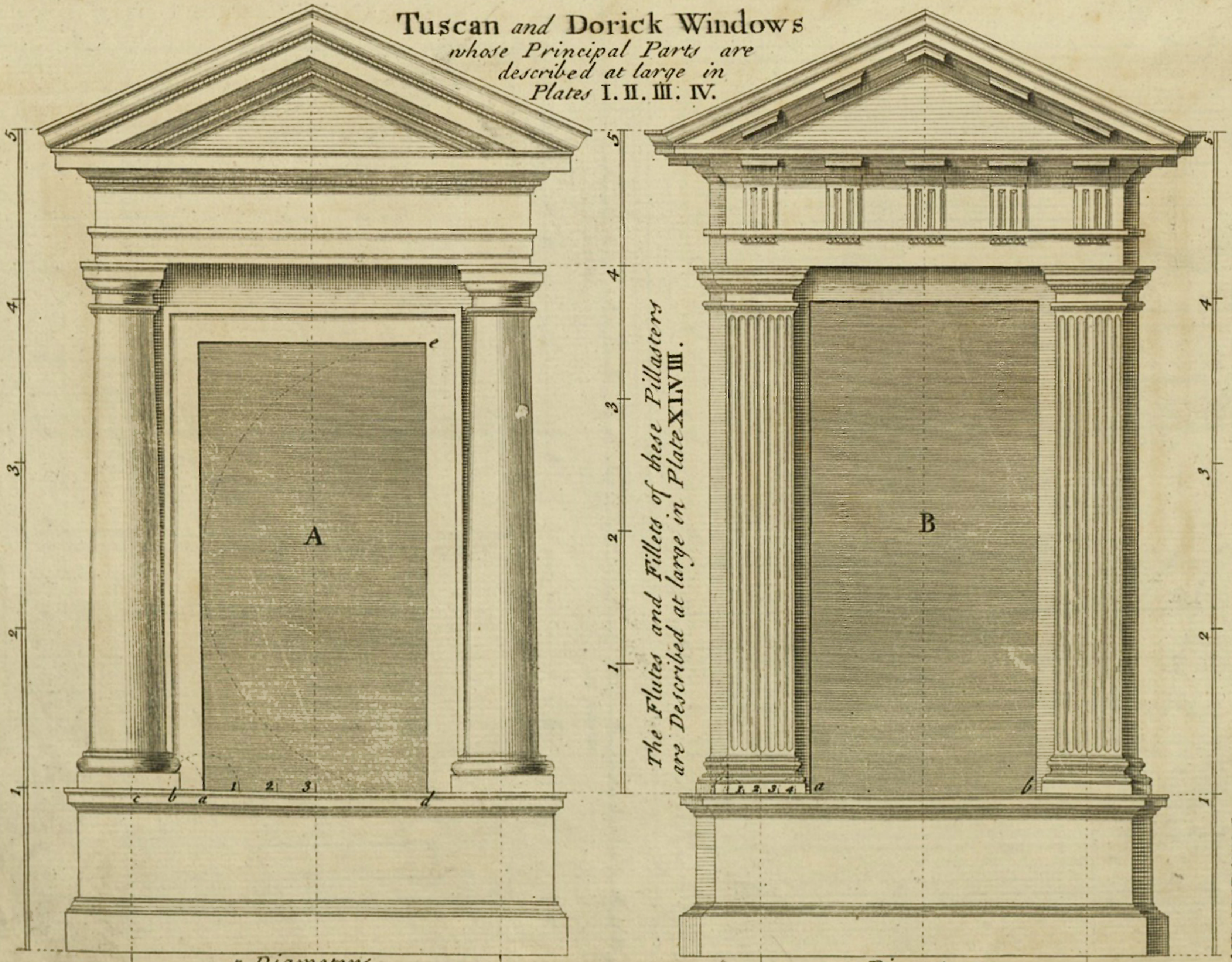
Plate XLVI.

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Tuscan *and* Dorick Windows

whose Principal Parts are described at large in Plates I. II. III. IV.



The Flutes and Fillets of these Pillasters are Described at large in Plate XLVIII.

5 Diameters.

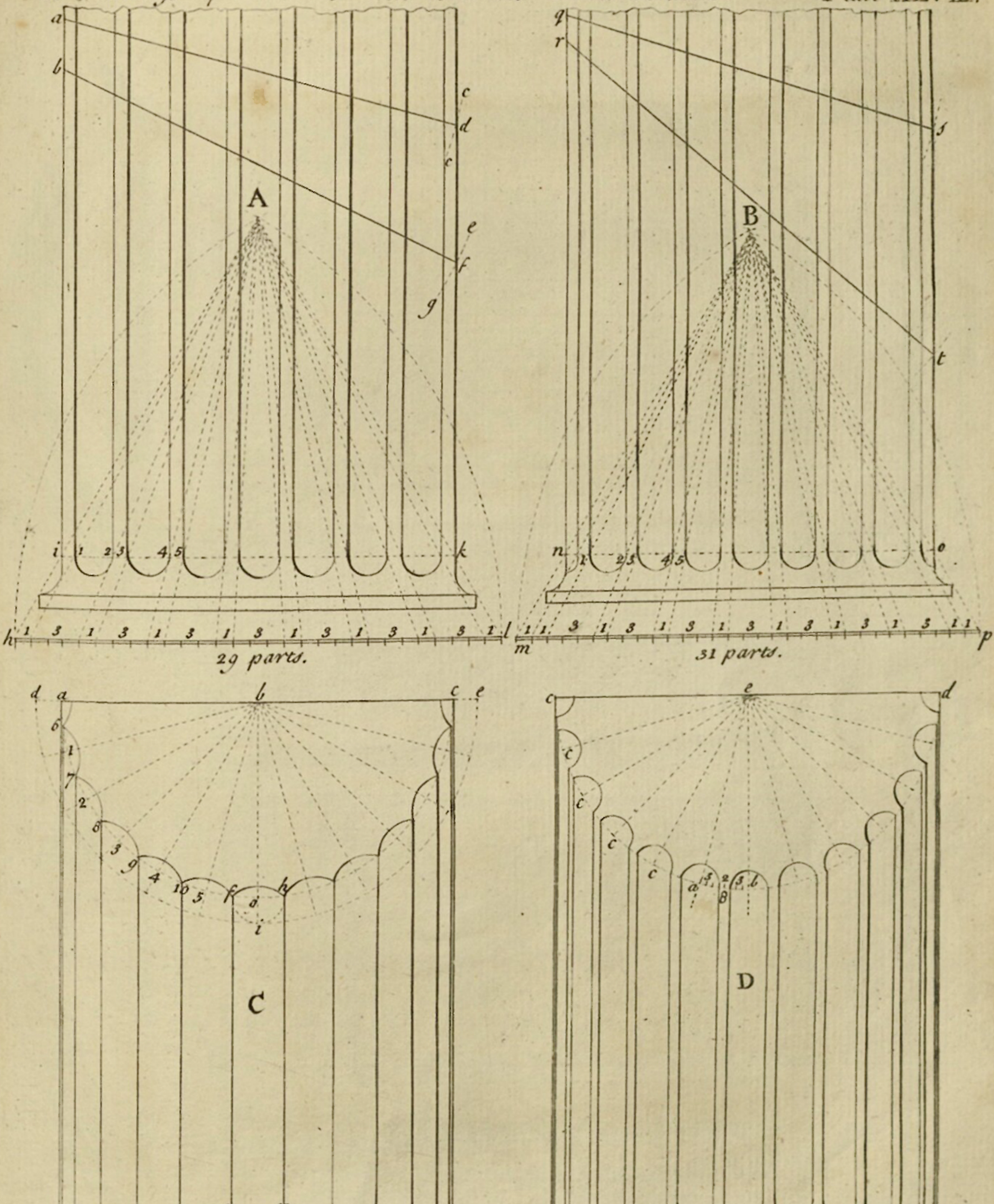
5 Diameters.

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Plate XLVII.

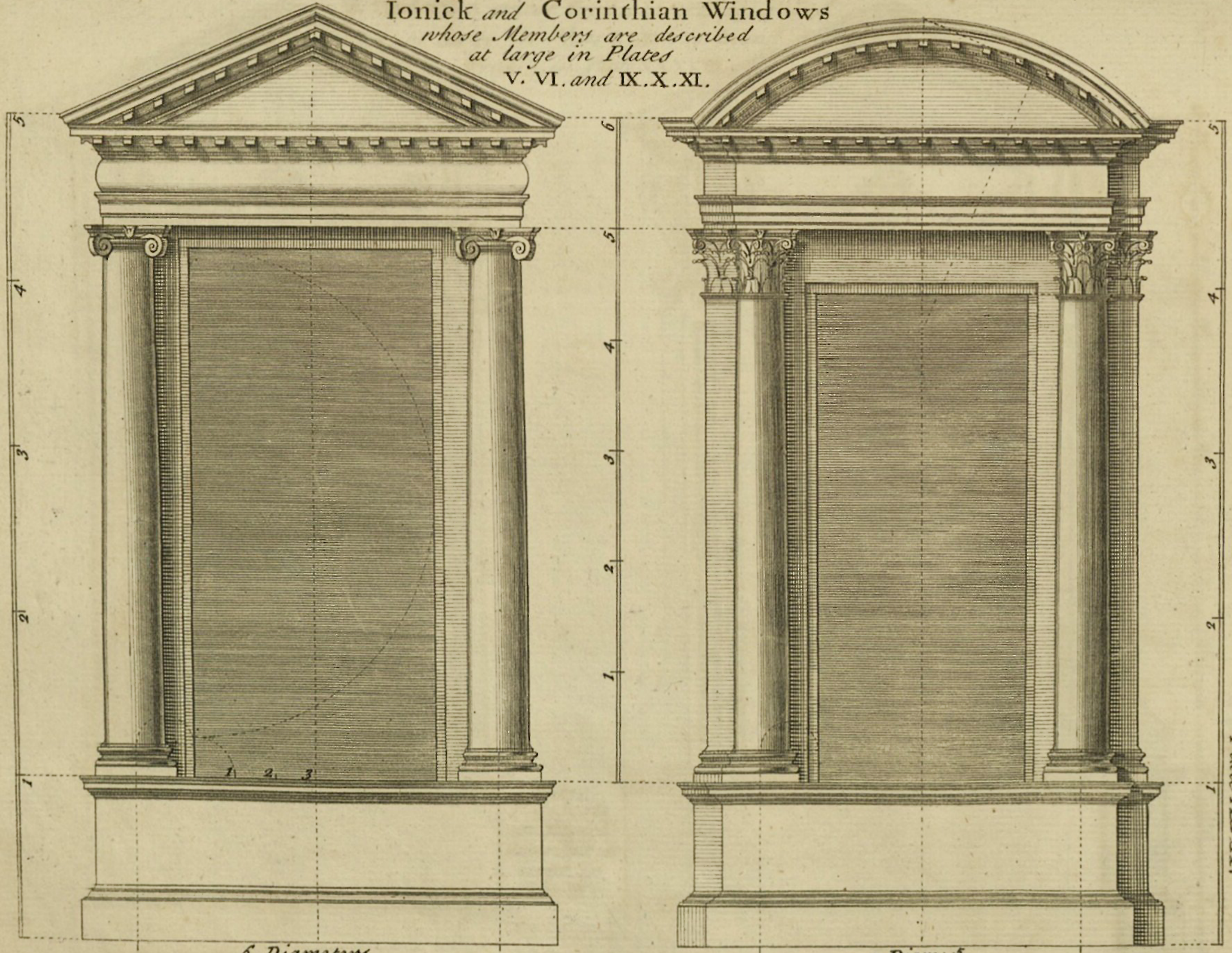
The Flutings of Pilasters and Columns Demonstrated. *Plate* XLVIII.


A
B
C
D
a
b
c
d
e
f
g
i
k
h
l
1 2 3 4 5
29 parts.
q
r
s
t
n
o
m
p
31 parts.
x x x x x x x

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

Ionick *and* Corinthian Windows
whose Members are described
at large in Plates
V. VI. *and* IX. X. XI.


5
4
3
2
1
1
2
3
6
5
4
3
2
1
5
4
3
2
1

6 Diameters

5 Diam: $\frac{5}{6}$

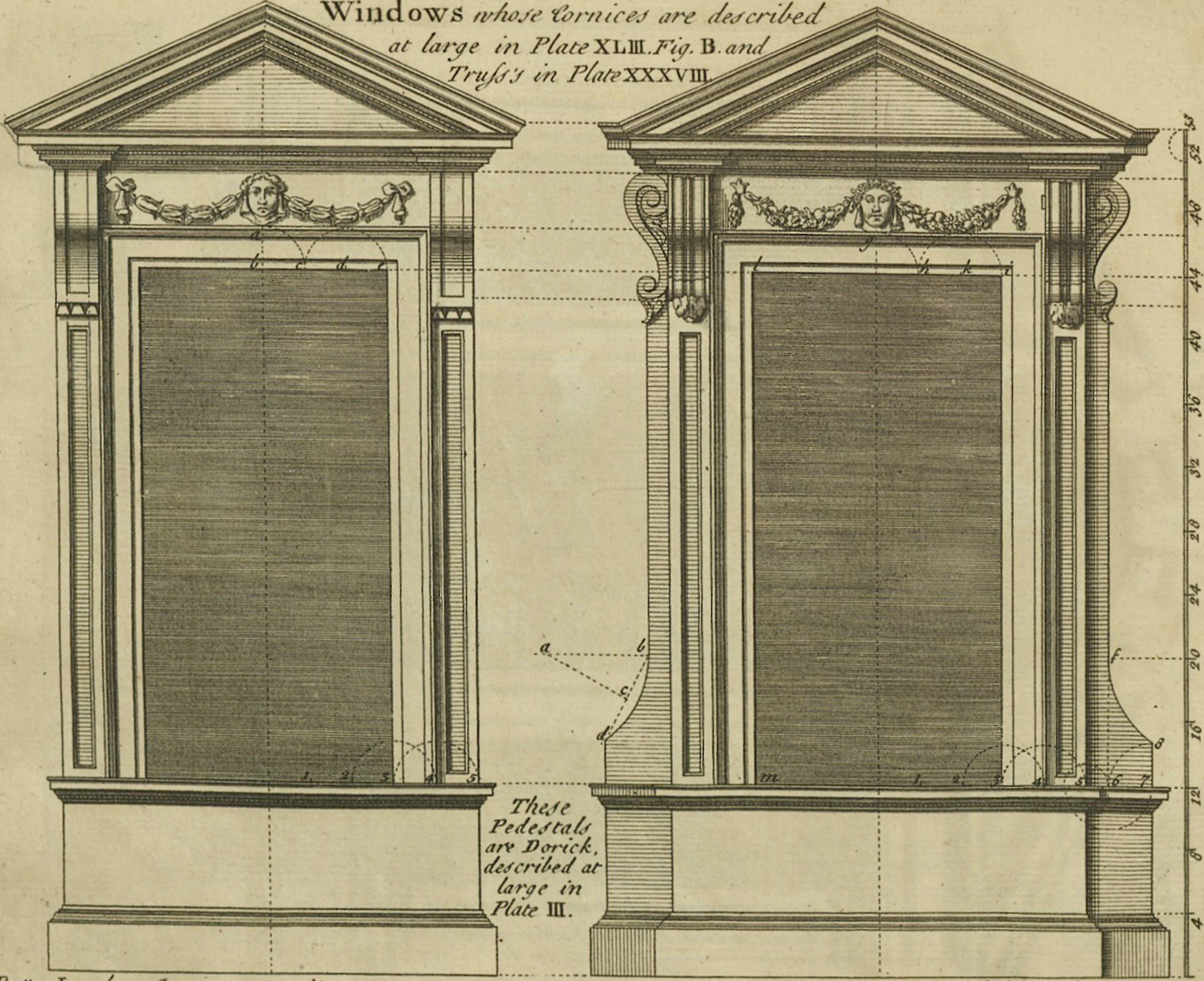
Batty Langley Invent and Delin.

Thos. Langley Sculp.

Plate XLIX.

Plate L.

Windows *whose Cornices are described at large in Plate* XLIII. *Fig.* B. *and Truſs's in Plate* XXXVIII.

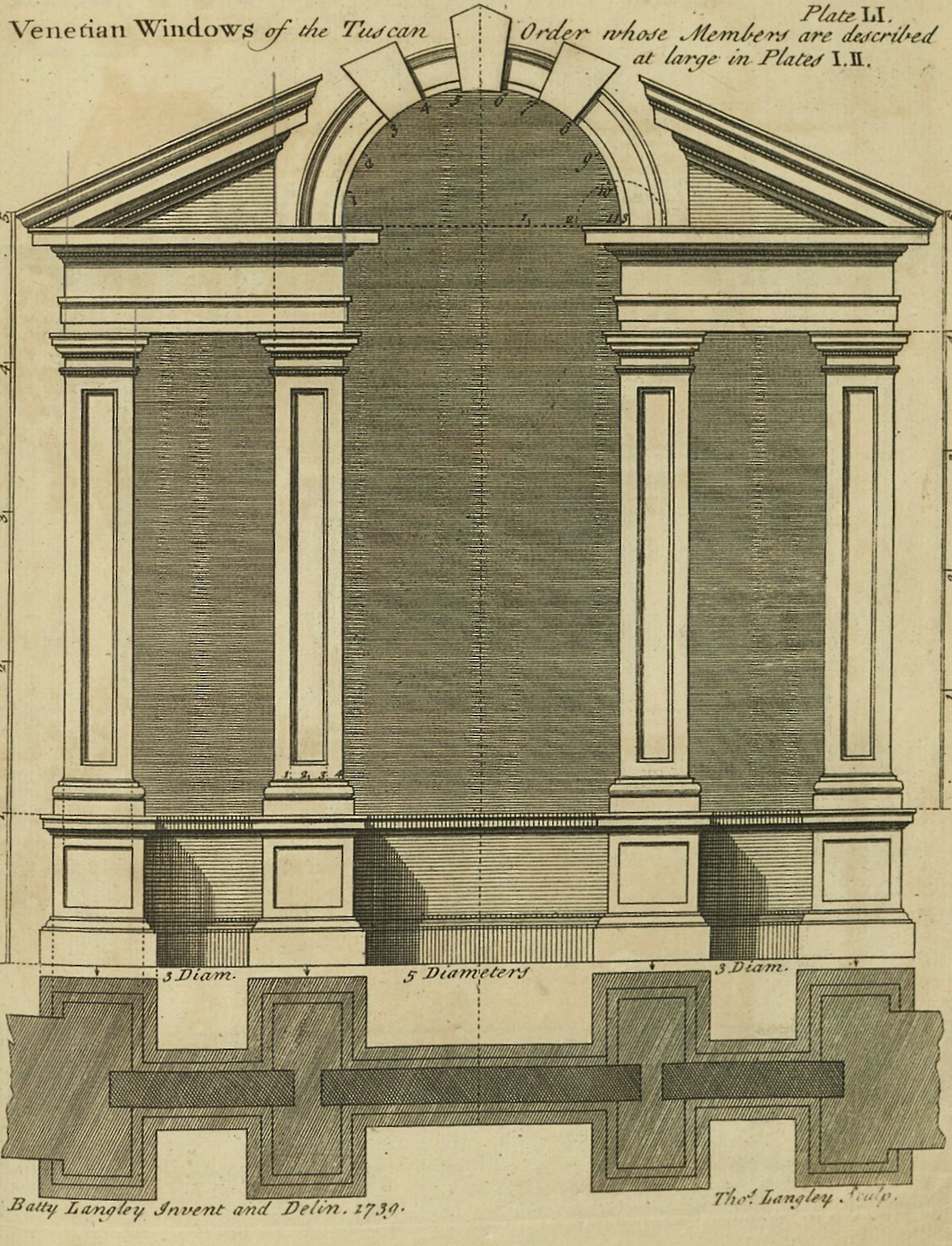

a
b
c
d
e
1
2
3
4
5
g
l
h
k
i
m
1
2
3
4
5
6
7
8
a
b
c
d
f
53
52
48
44
40
36
32
28
24
20
16
12
8
4

These Pedeſtals are Dorick, described at large in Plate III.

Batty Langley Invent and Delin. 1739. *Thoˢ. Langley Sculp.*

Plate LI.

Venetian Windows *of the Tuscan Order whose Members are described at large in Plates* I.II.

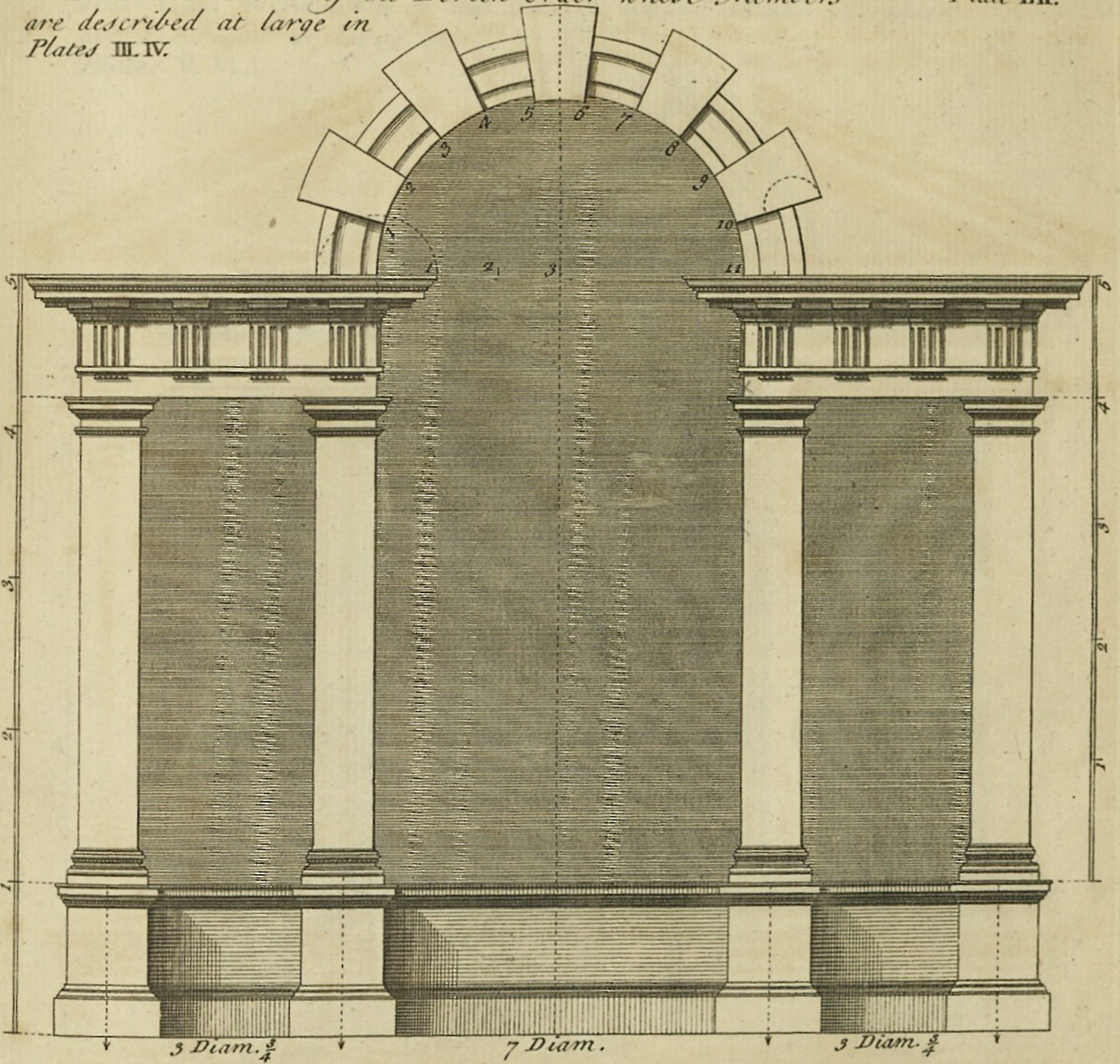

1
2
3
4
5
6
7
8
9
10
1
2
11
5
4
3
2
1
1
2
3
4
1. 2. 3. 4
5
4
3
2
1
3 Diam.
5 Diameters
3 Diam.

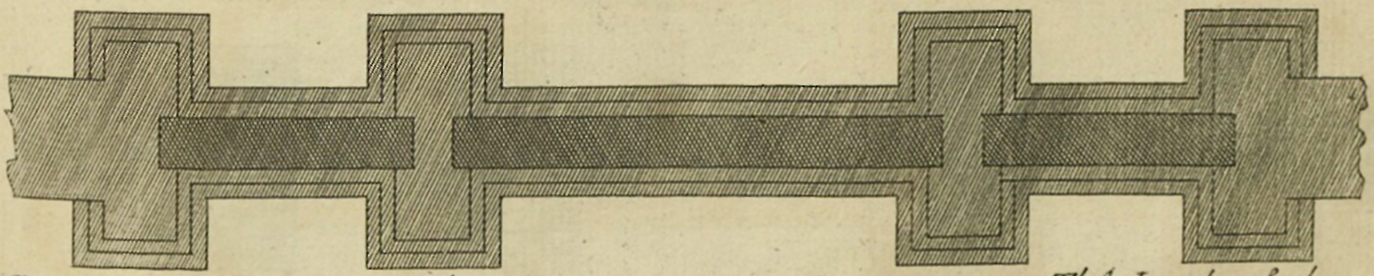
Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

Venetian Window *of the Dorick Order whose Members are described at large in Plates* III. IV.

Plate LII.

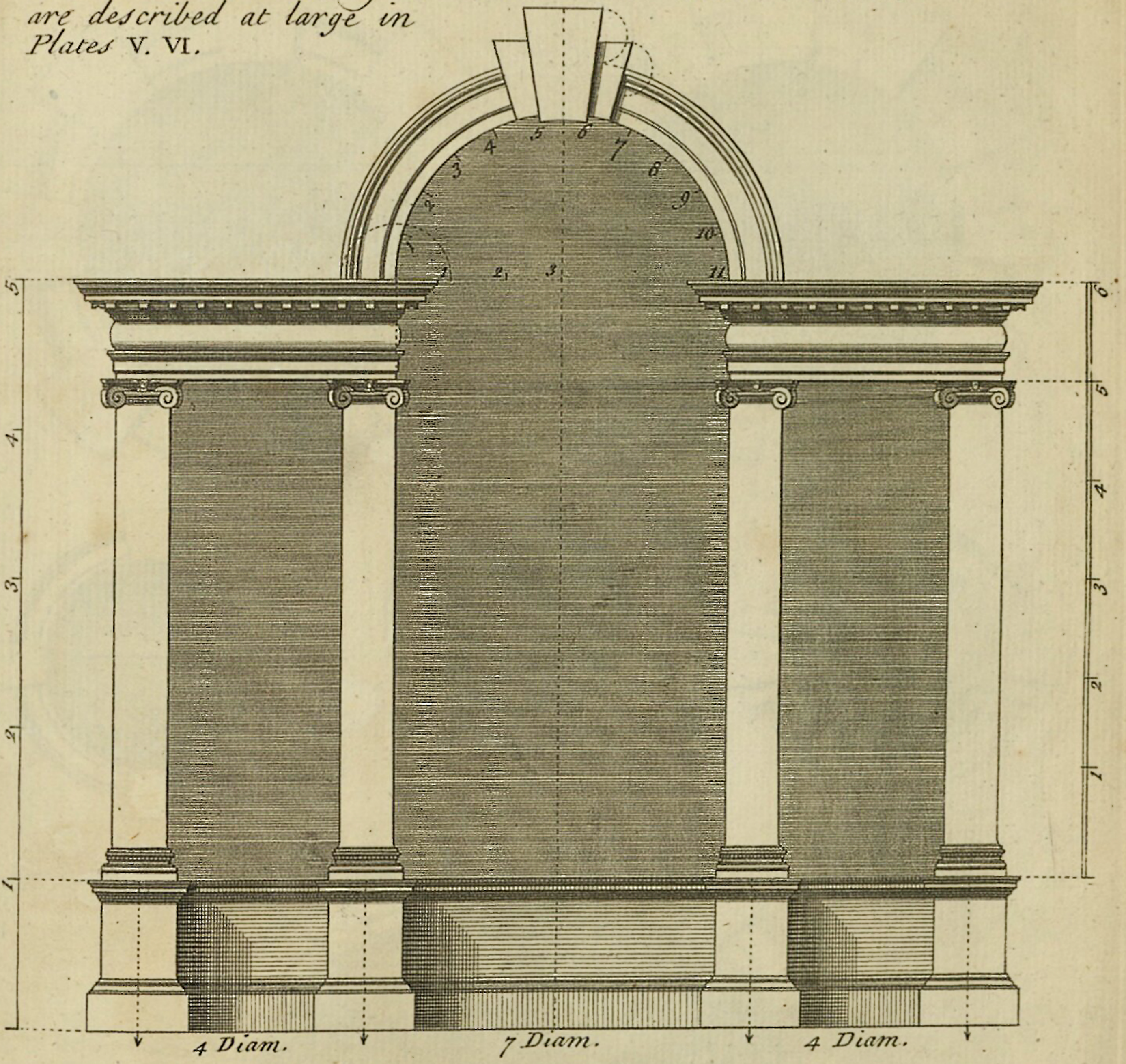

1
2
3
4
5
6
7
8
9
10
11
1
2
3
1
2
3
4
5
1
2
3
4
5
3 Diam. $\frac{3}{4}$
7 Diam.
3 Diam. $\frac{3}{4}$

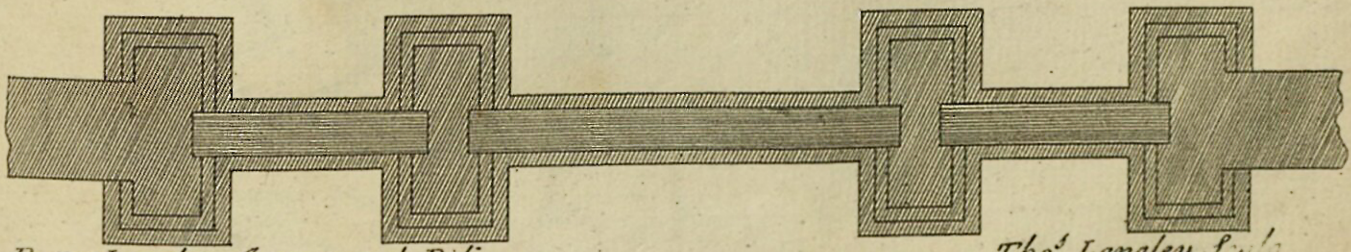


Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Venetian Windows *of the Ionick Order whoſe Members are deſcribed at large in Plates* V. VI.


1
2
3
4
5
6
7
8
9
10
11
1
2
3
1
2
3
4
5
1
2
3
4
5
6
4 Diam.
7 Diam.
4 Diam.

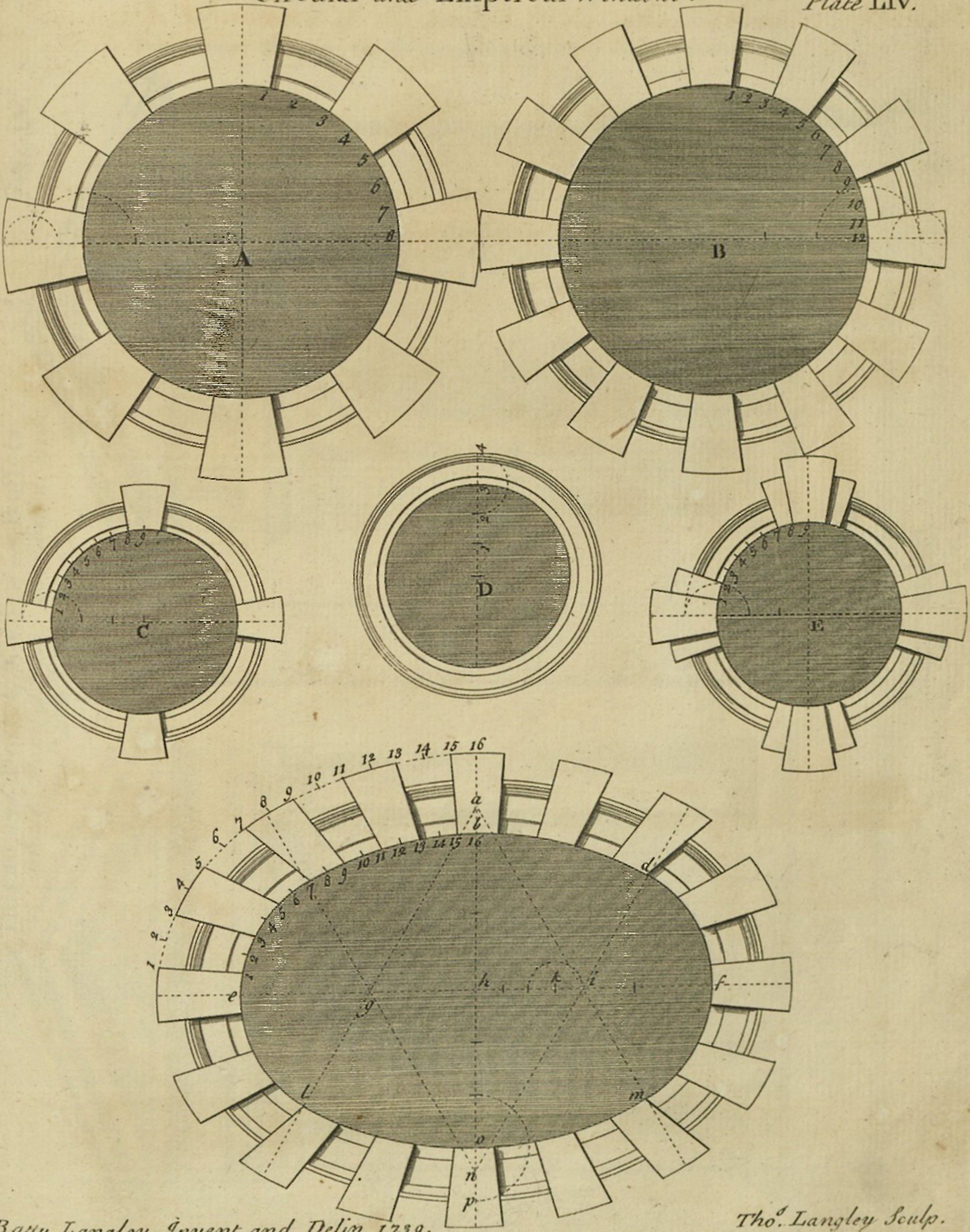


Batty Langley Invent and Delin. 1739.

Thoſ. Langley Sculp

Circular *and* Elliptical *Windows.*

Plate LIV.

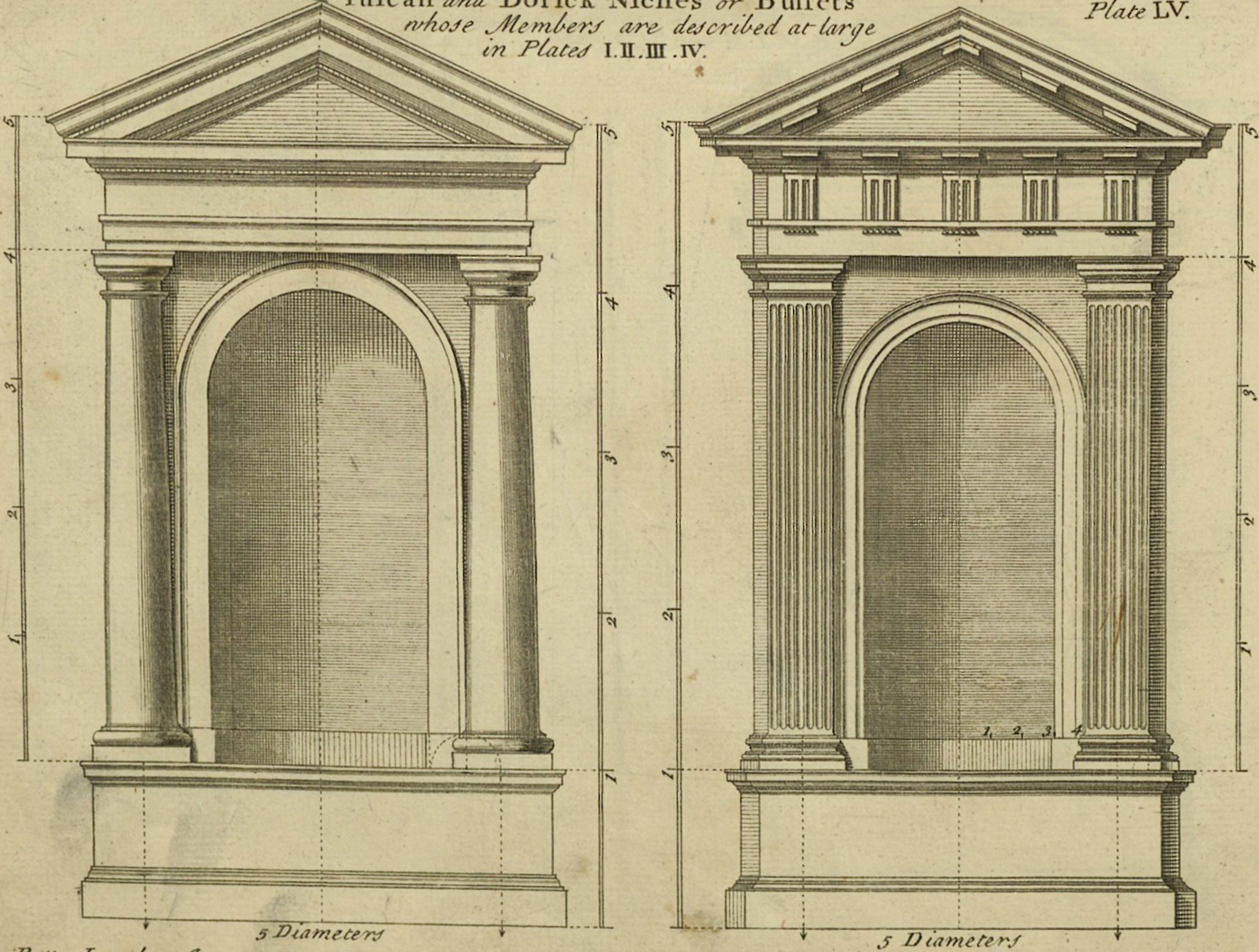

A
1 2 3 4 5 6 7 8
B
1 2 3 4 5 6 7 8 9 10 11 12
C
1 2 3 4 5 6 7 8 9
D
1 2 3 4
E
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
a
b
d
e
f
g
h
k
i
l
m
o
n
p

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Plate LV.

Tuſcan *and* Dorick Niches *or* Buffets *whose Members are deſcribed at large in Plates* I.II.III.IV.

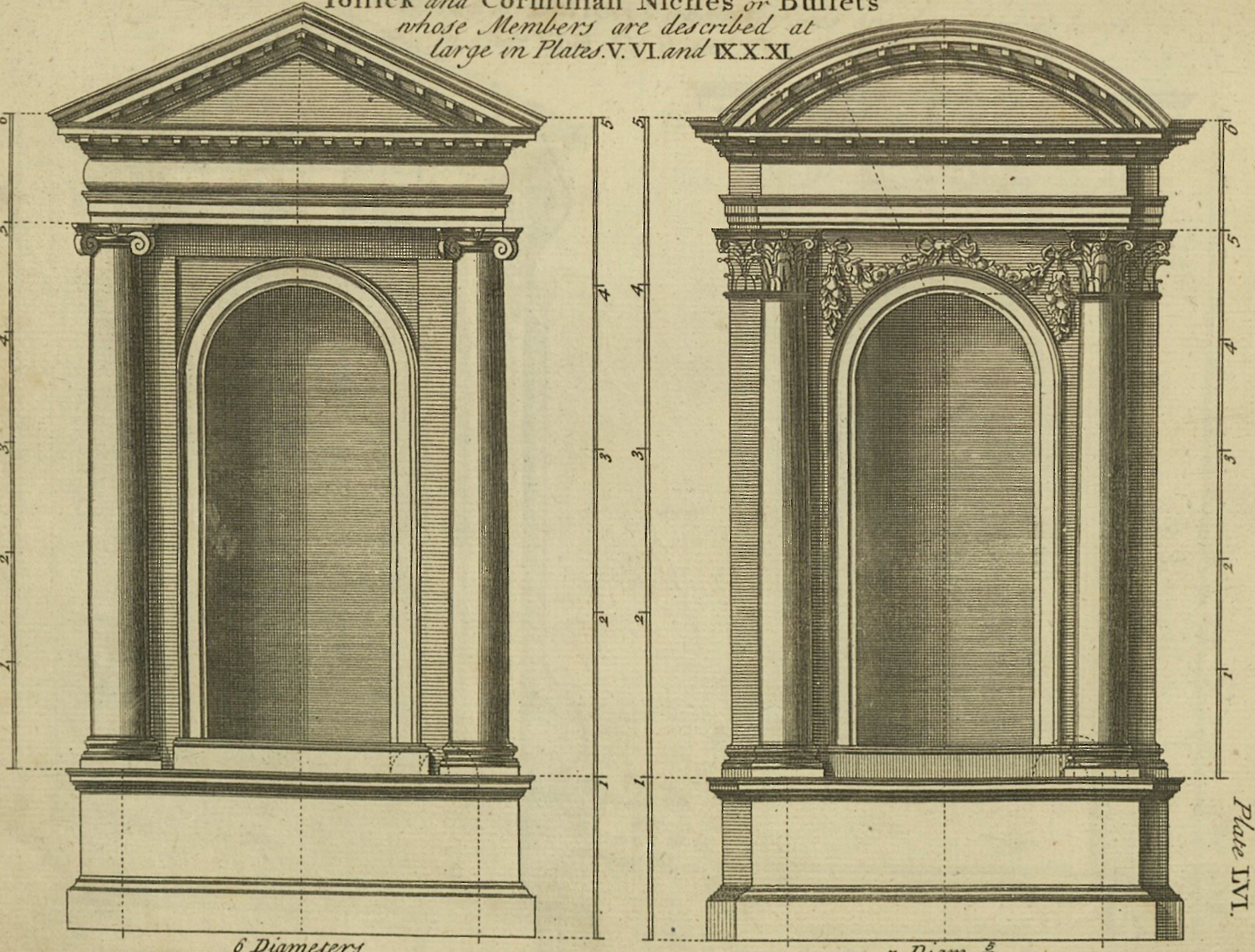

5
4
3
2
1
5 Diameters
1
2
3
4
5 Diameters

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Plate LVI.

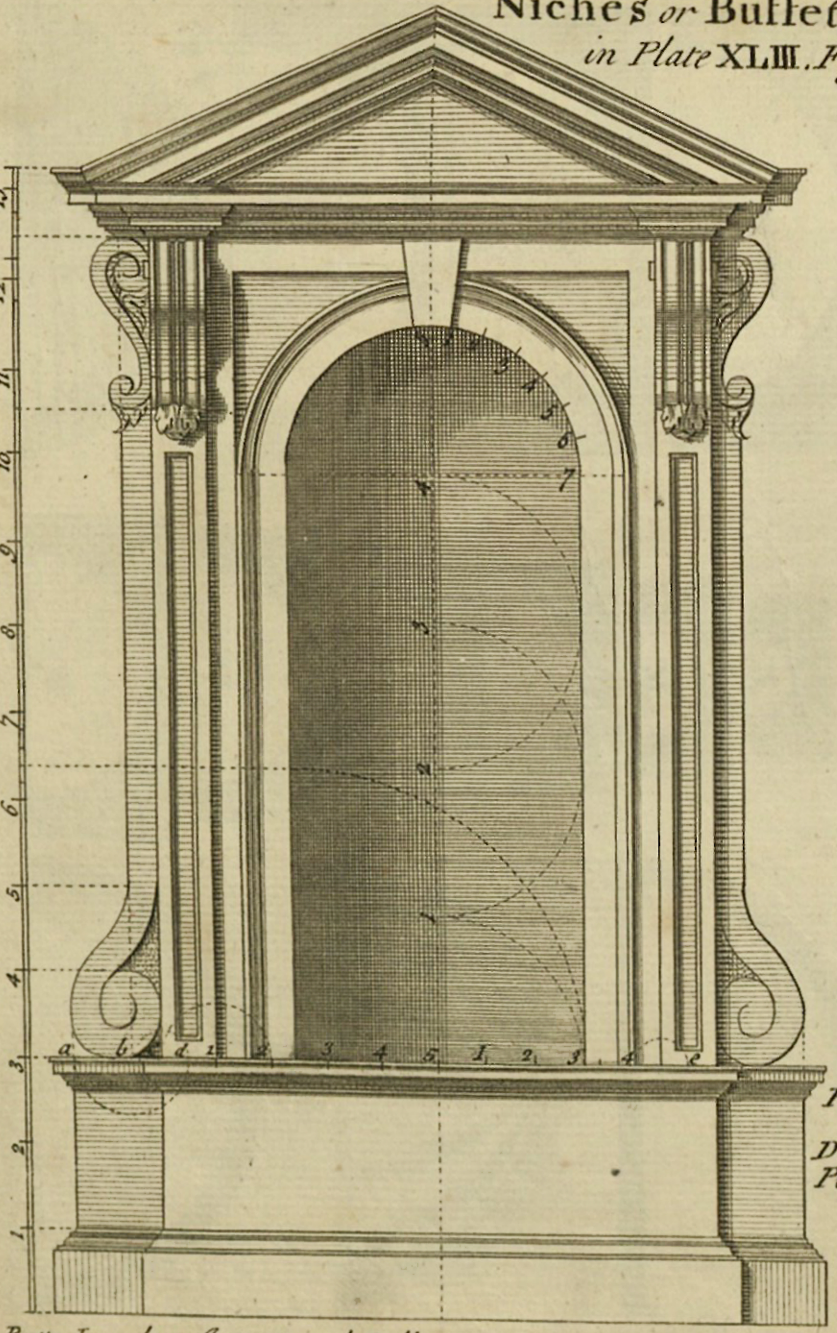
Ionick *and* Corinthian Niches *or* Buffets
whose Members are described at large in Plates V. VI. *and* IX. X. XI.


6 Diameters
5 Diam. $\frac{5}{6}$
1
2
3
4
5
6

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Niches *or* Buffetts *whose Cornices are described at large in Plate* XLIII. *Fig.* B. *and Trusses in Plate* XXXVIII.


1
2
3
4
5
6
7
8
9
10
11
12
13
a
b
c
d
1 2 3 4 5 1 2 3 4
e
1 2 3 4 5 6 7

These Pedestals are Dorick as in Plate III.

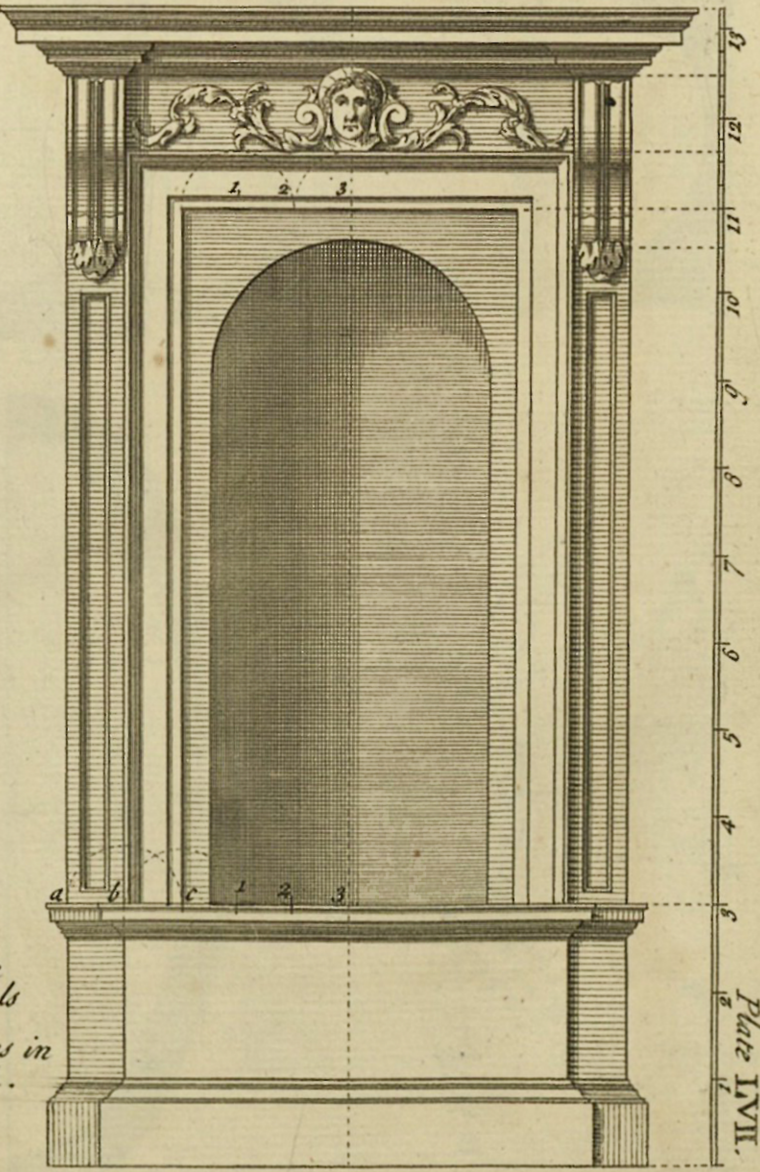

a
b
c
1 2 3
1 2 3
1
2
3
4
5
6
7
8
9
10
11
12
13

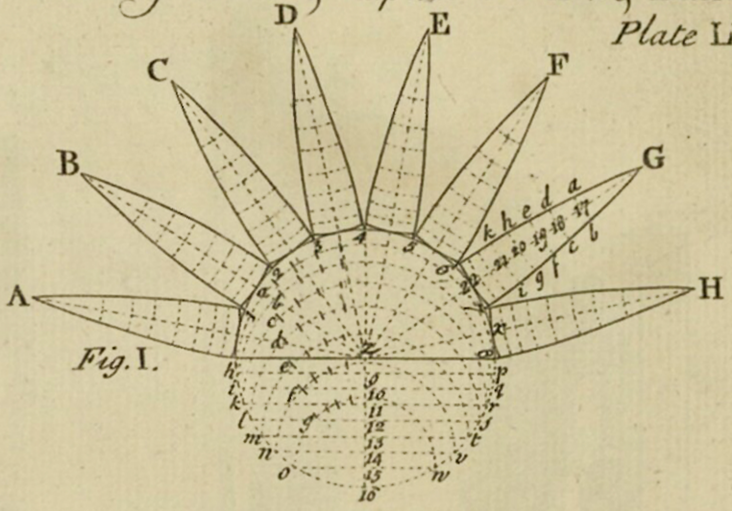
Plate LVII.

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

The various Methods for forming the Heads of Circular & Ellipical Niches & Buffets.

Plate LVIII.



A
B
C
D
E
F
G
H
k h e d a
22 20 19 18 17
i g f c b
h i k l m n o
p q r s t v w
9 10 11 12 13 14 15 16

Fig. I.

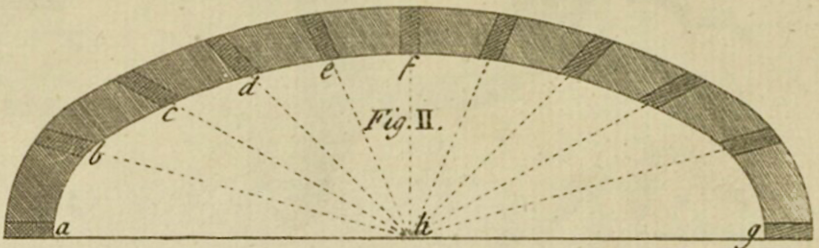
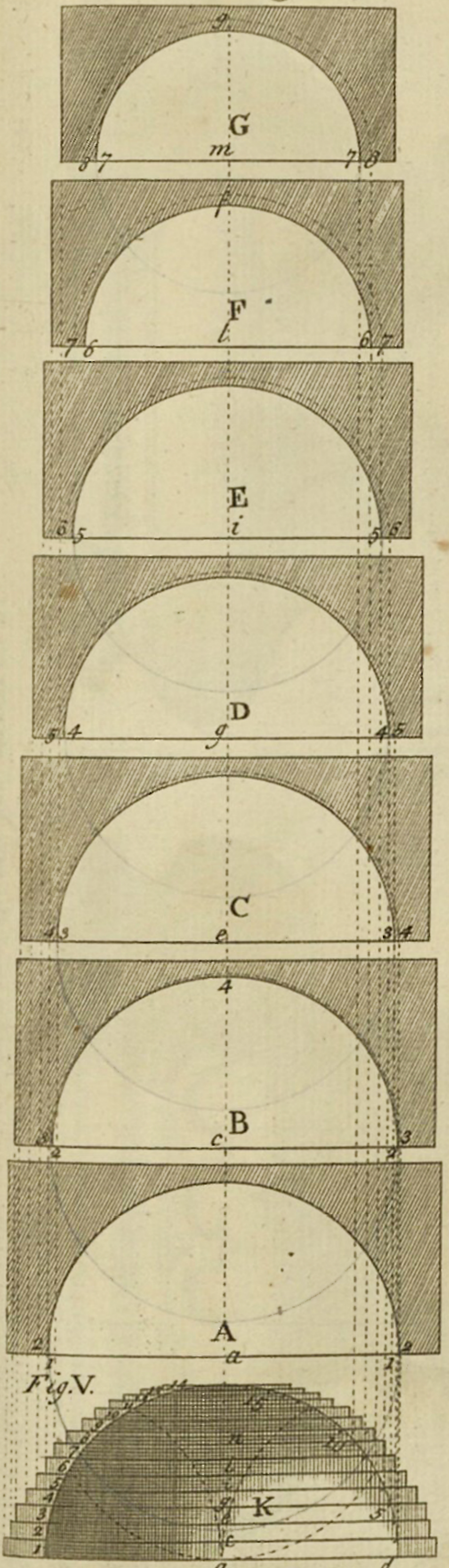
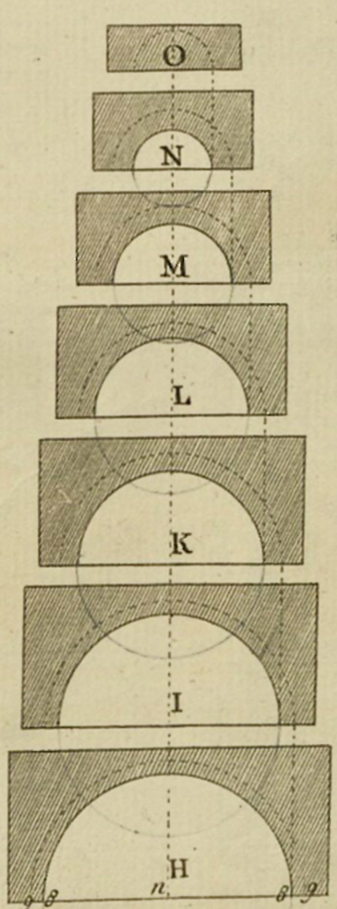


Fig. II.

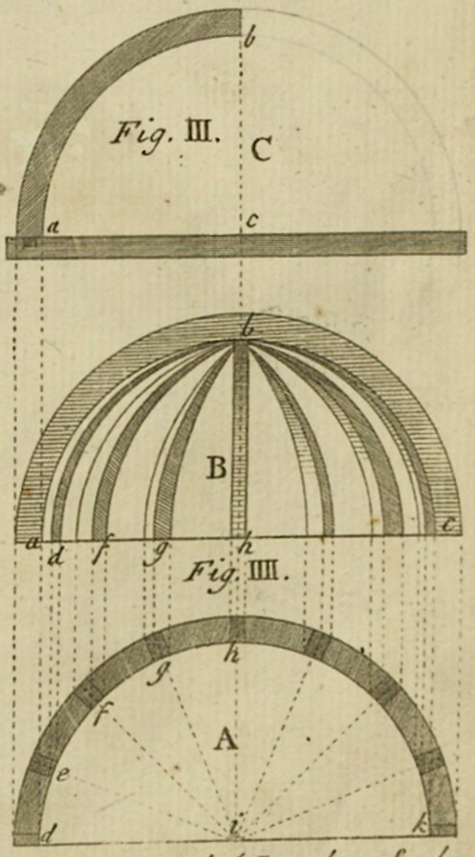


G
9
8 7
m
7 8
F
f
7 6
l
6 7
E
6 5
i
5 6
D
5 4
g
4 5
C
4 3
e
3 4
B
4
c
2 3
A
a
2
1
K
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
a
d

Fig. V.



O
N
M
L
K
I
H
9 8
n
8 9



b
C
a
c
b
B
a d f g h c
A
h
g
f
e
d
i
k

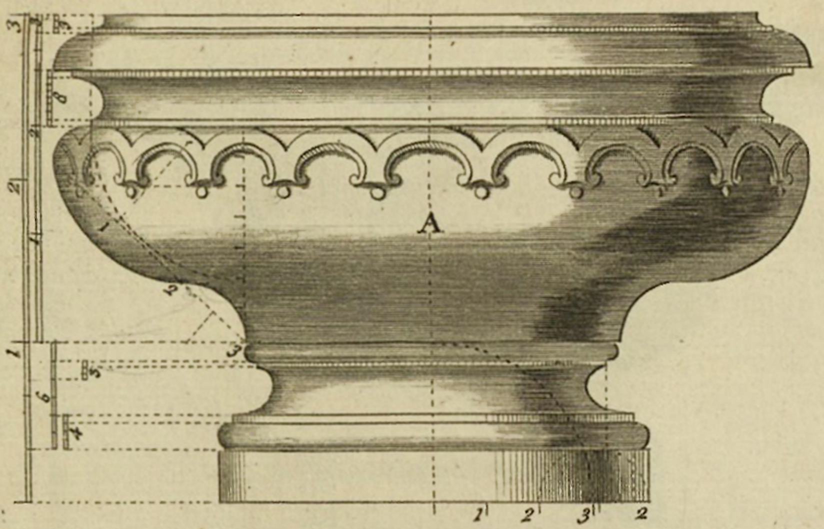
Fig. III.

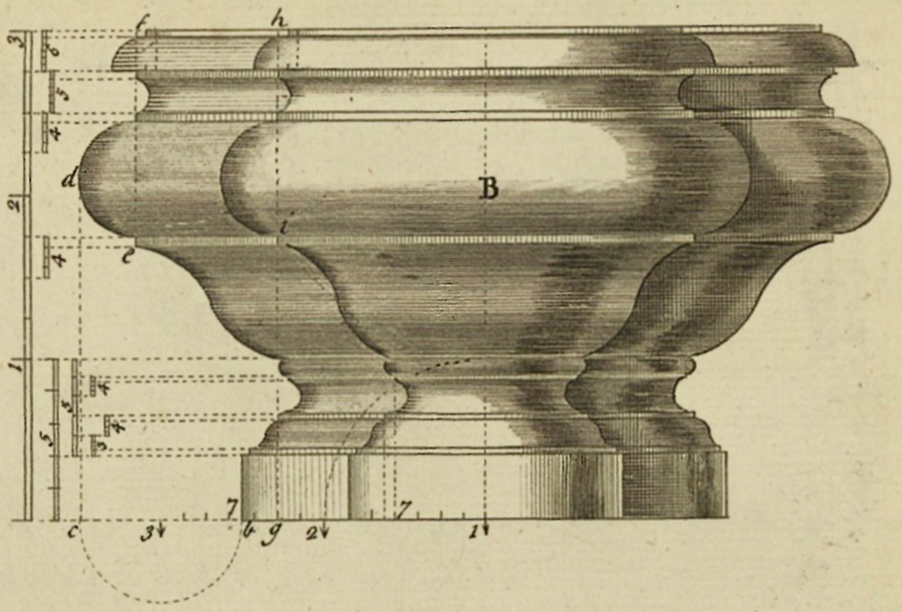
Fig. IIII.

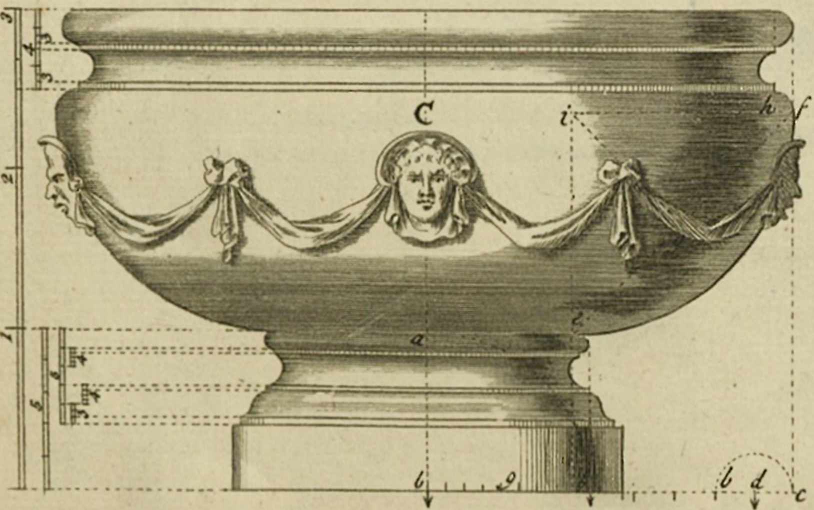
Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Cisterns *for* Buffets.


A
1
2
3
1
2
3
4
5
6
8
9


B
f
h
d
e
i
c
b
g
7
1
2
3
4
5
6


C
i
h
f
a
e
b
d
c
1
2
3
4
5
6
9

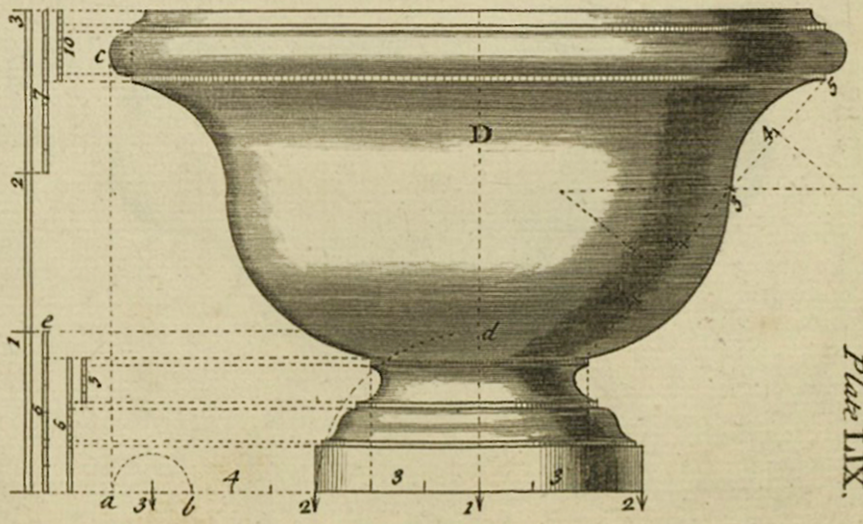
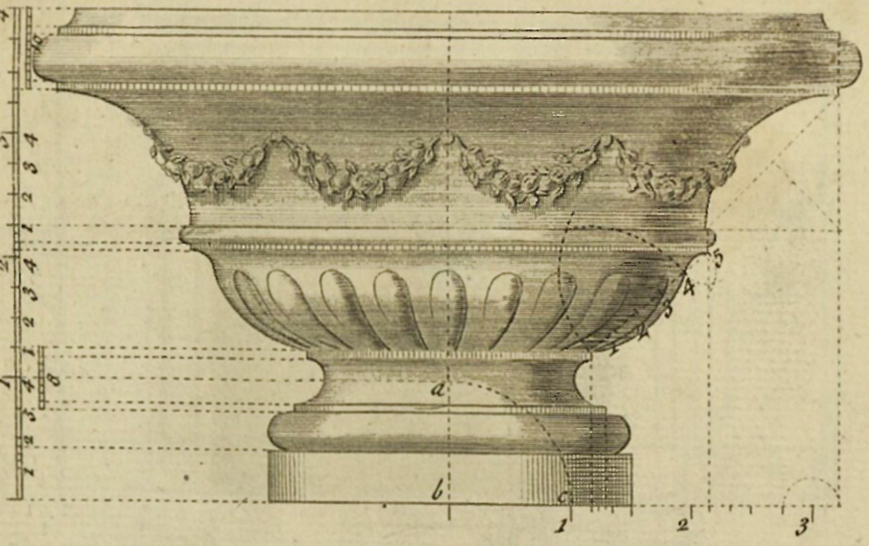

D
c
e
d
a
b
1
2
3
4
5
6
7
10

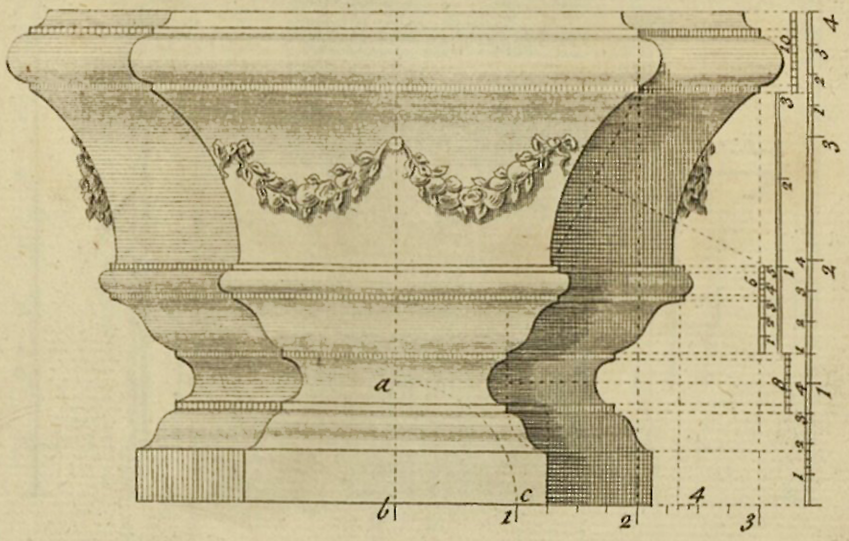
Plate LIX.

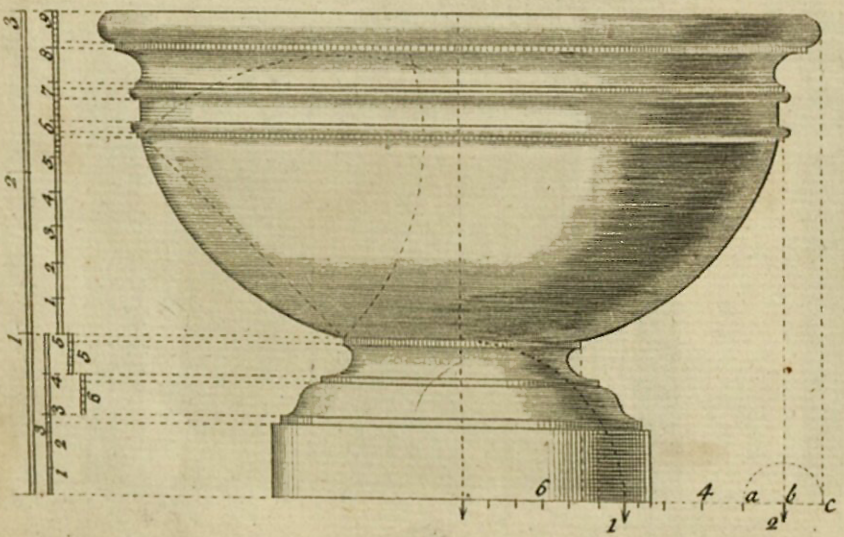
Batty Langley Invent and Delin. 1739.

Thoˢ Langley Sculp.

Ciſterns *for* Buffets.







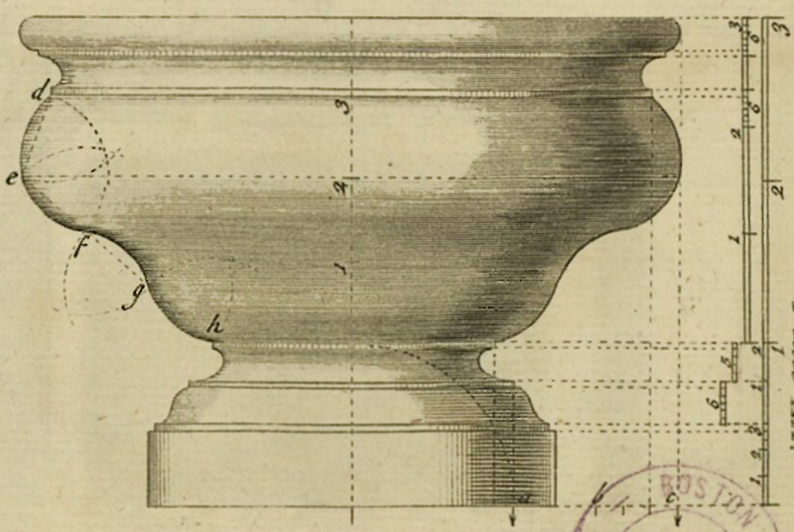


Plate LX.

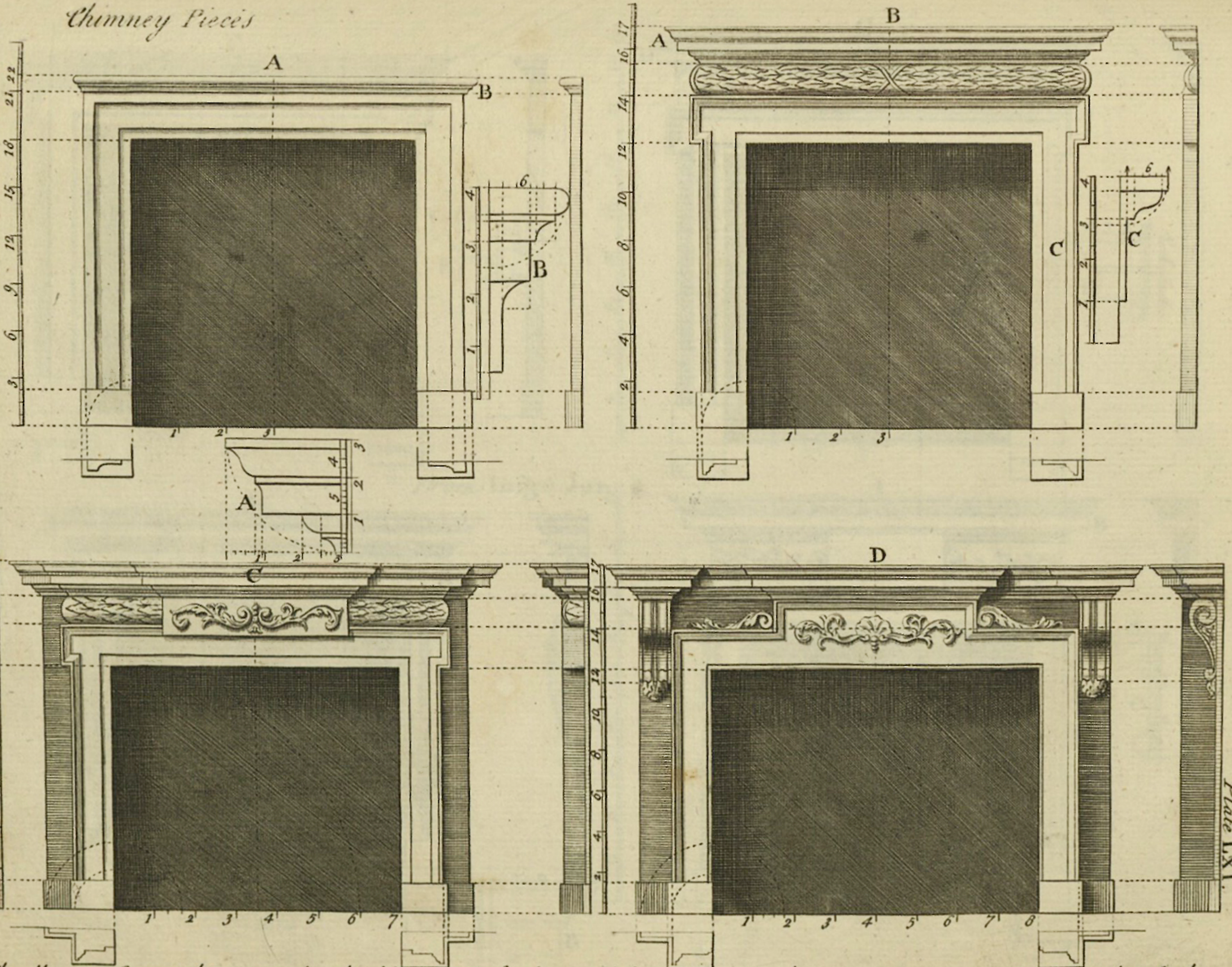
Batty Langley Invent and Delin. 1739.

Thoˢ Langley Sculp.

BOSTON ARCHITECTURAL CLUB

Chimney Pieces

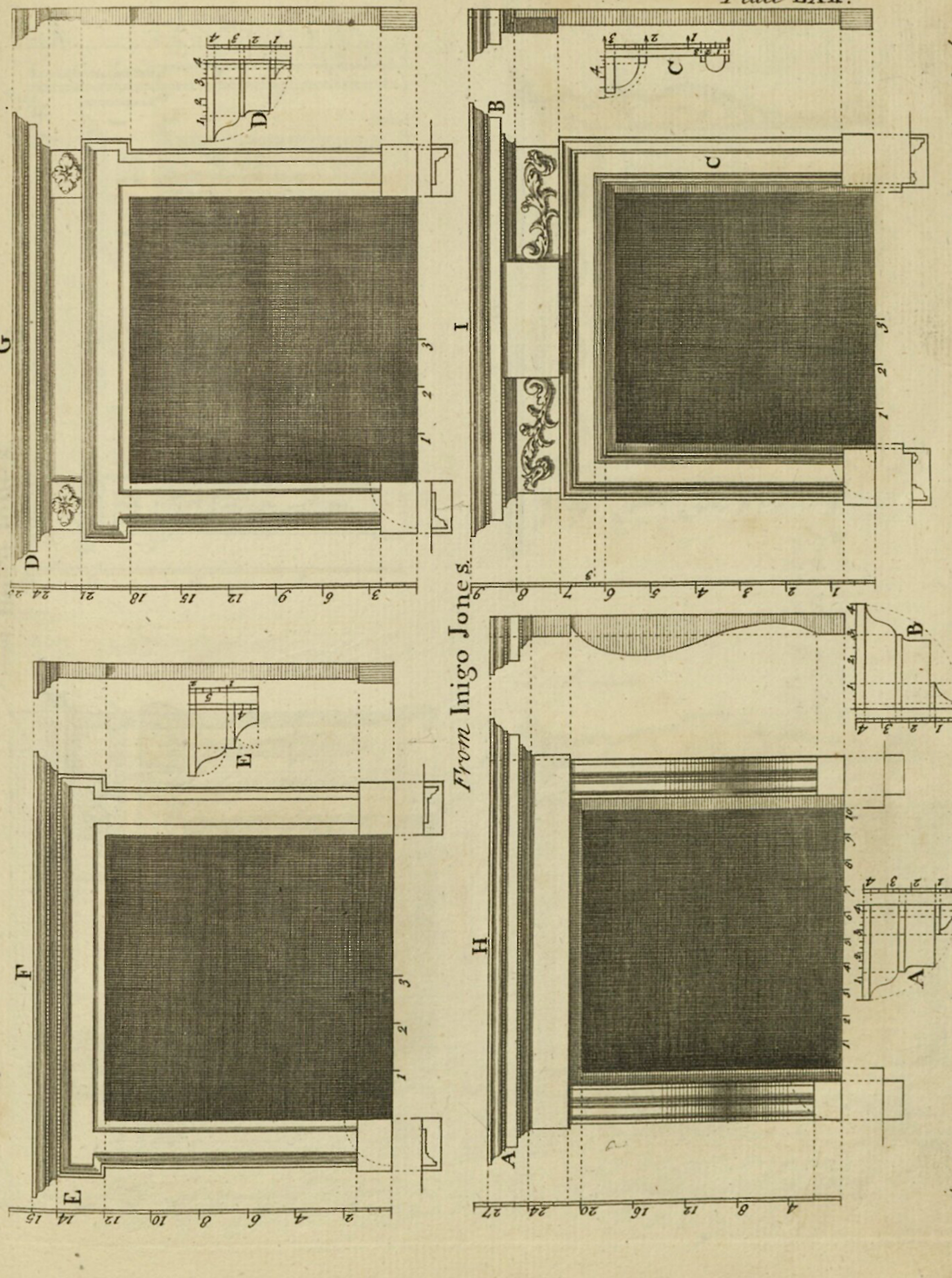
Plate LXI.


A
B
A
B
C
C
A
C
D
1 2 3
1 2 3
1 2 3 4 5 6 7
1 2 3 4 5 6 7 8
3 6 9 12 15 18 21 22
2 4 6 8 10 12 14 16 17

The Mesures Invented, & proportioned, with Plans & Sections added. By Batty Langley 1739.

Thoˢ. Langley Sculp.

Plate LXII.



From Inigo Jones.

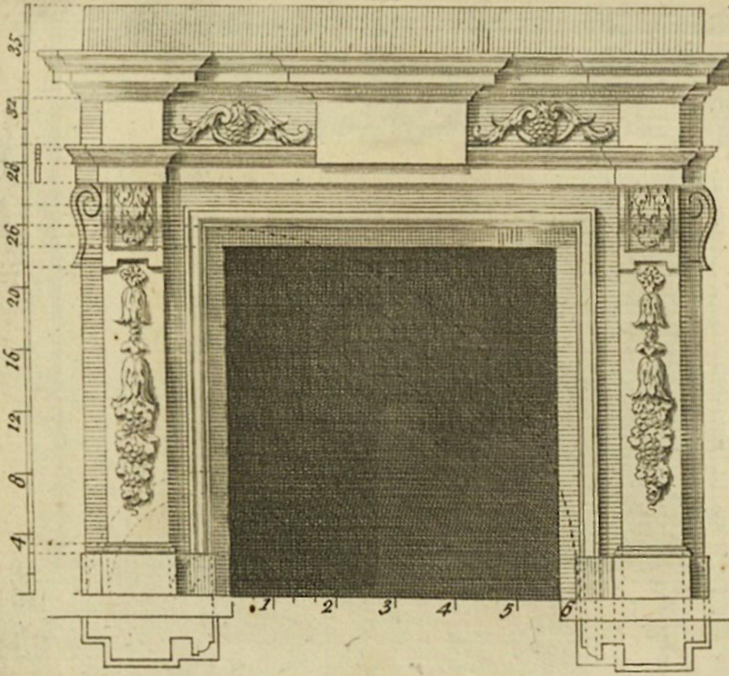
Thos. Langley Sculp.

The Proportions and Measures Invented by Batty Langley 1739.

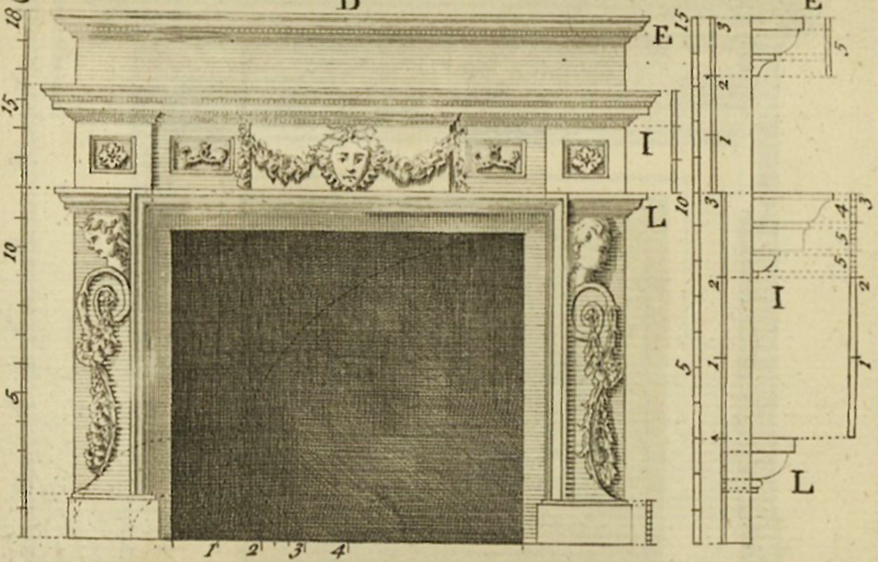
Plate LXIII.

From Inigo Jones.

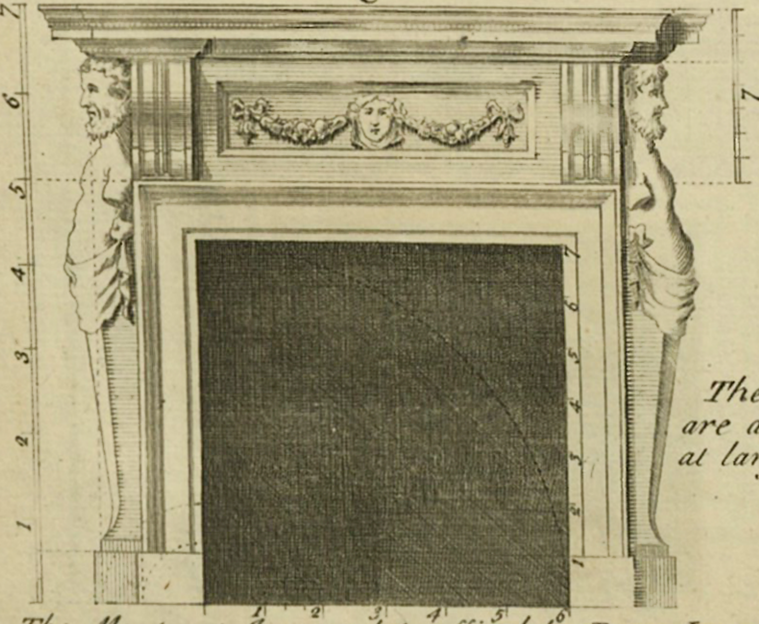
A


35
32
28
26
20
16
12
8
4
1
2
3
4
5
6

B

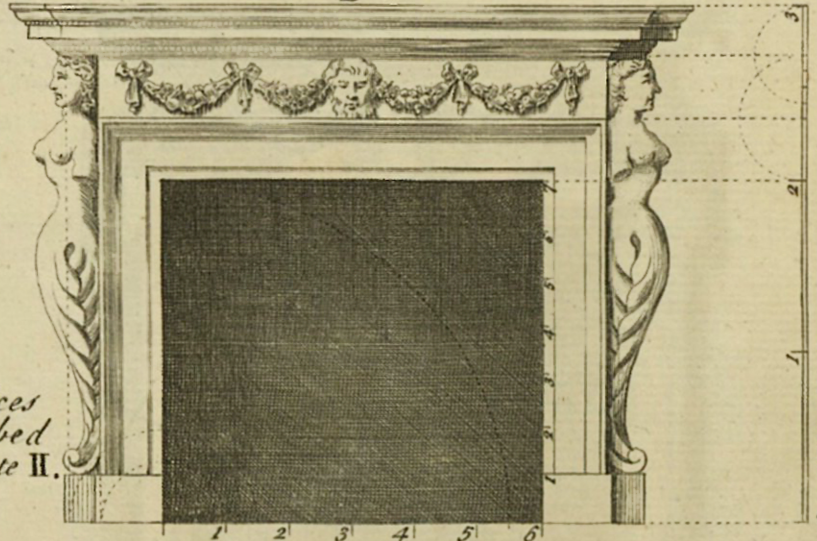

18
15
10
5
E
I
L
1
2
3
4
15
10
5
3
2
1
E
5
I
L

C


7
6
5
4
3
2
1
7
1
2
3
4
5
6

These Cornices
are all described
at large in Plate II.

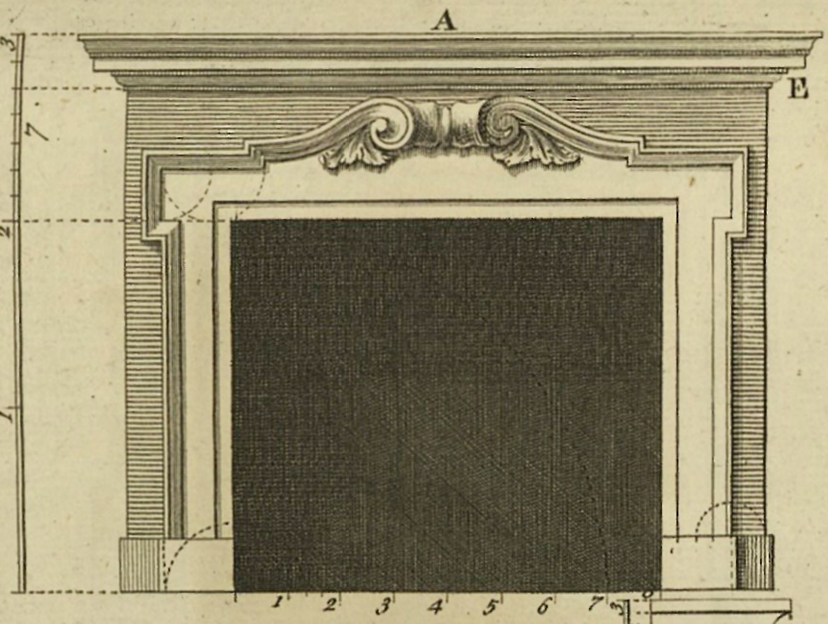
D

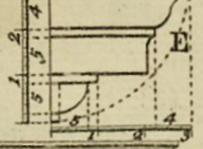


The Measures Invented & affix'd by Batty Langley 1739.

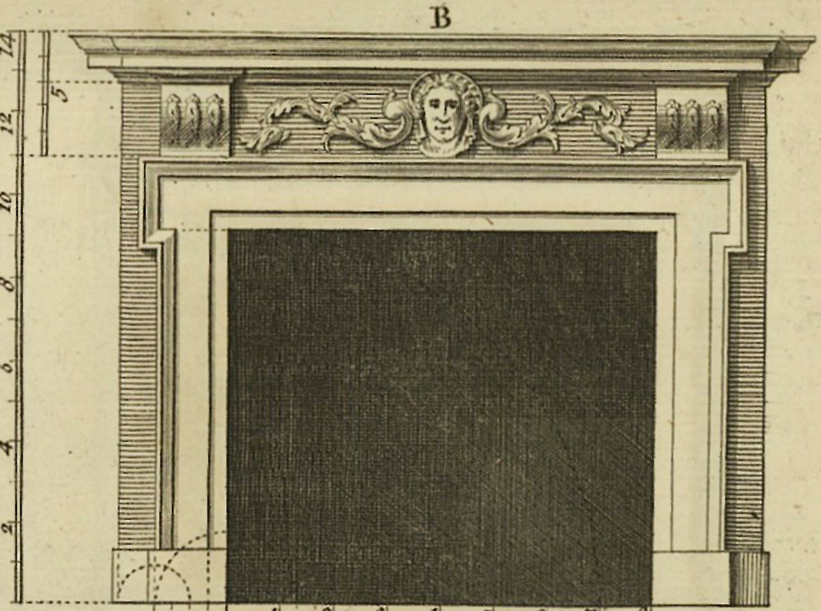
Thoˢ. Langley Delin and Sculp.

A


E
3
7
2
1
1 2 3 4 5 6 7 8

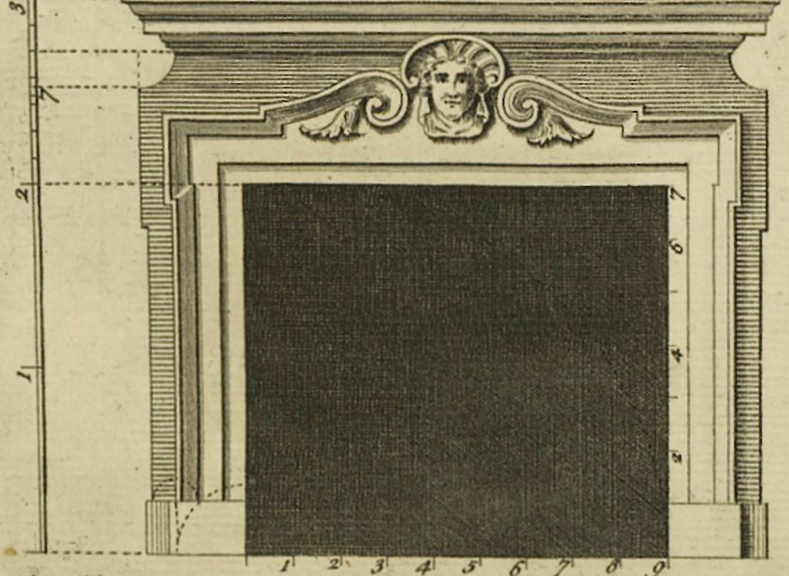

E
3
4
2
5
1
5
5 4
1 2 3

B

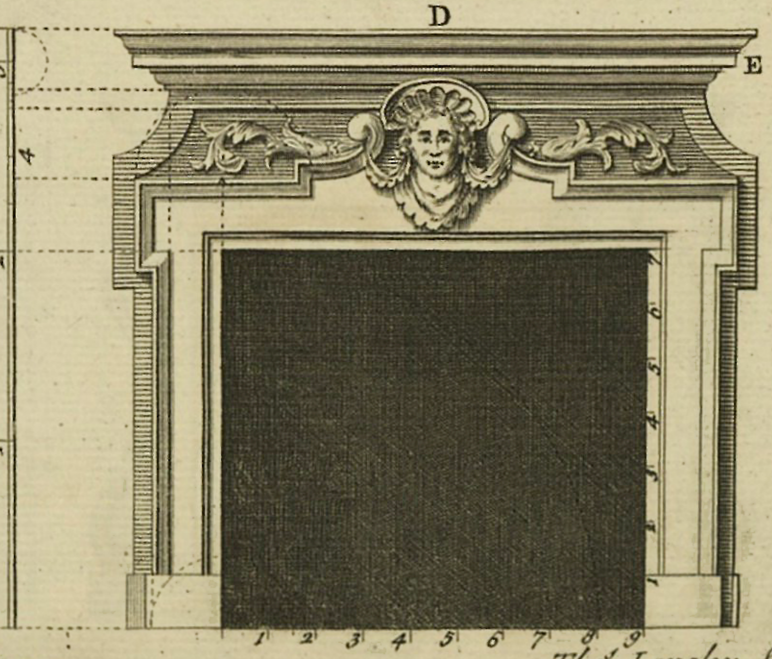

14
5
12
10
8
6
4
2
1 2 3 4 5 6 7 8

The Cornices to B and C are at large in Plate II.

C


3
7
2
1
7
6
4
2
1 2 3 4 5 6 7 8 9

D

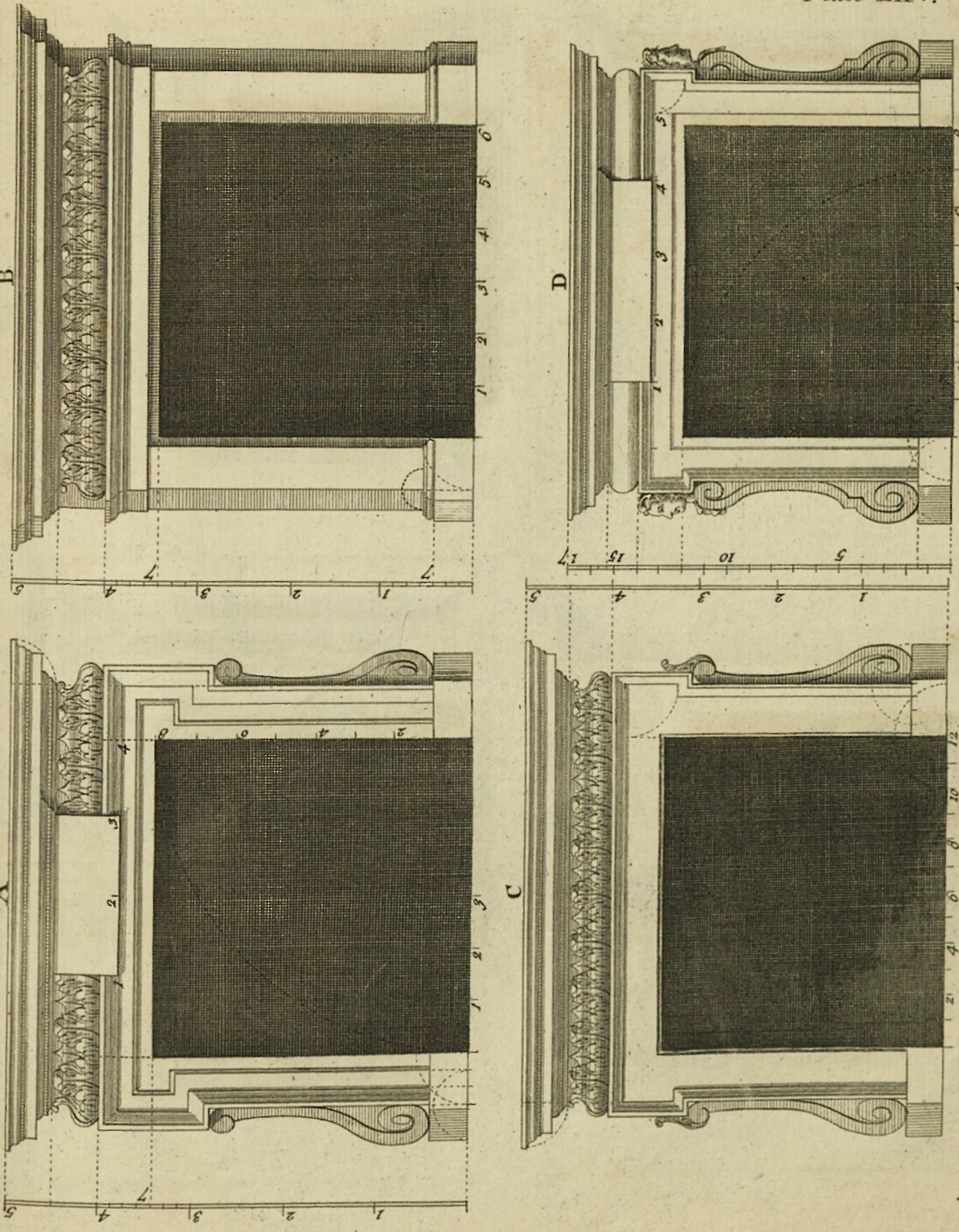

E
3
4
2
1
7
6
5
4
3
2
1
1 2 3 4 5 6 7 8 9

The Measures Invented and Proportioned by Batty Langley 1739.

Thoˢ. Langley Sculp.

Plate LXIV.

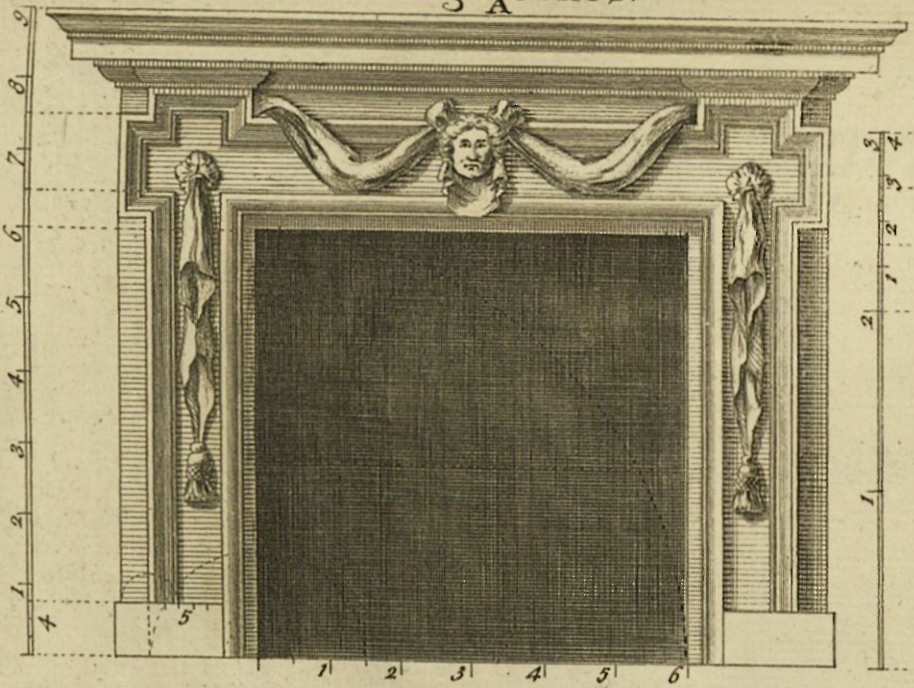
Plate LXV.


A
B
C
D
1
2
3
4
5
6
8
10
12
15
17

Thomas Langley Invent. Delin. and Sculp. 1739.

From Inigo Jones.

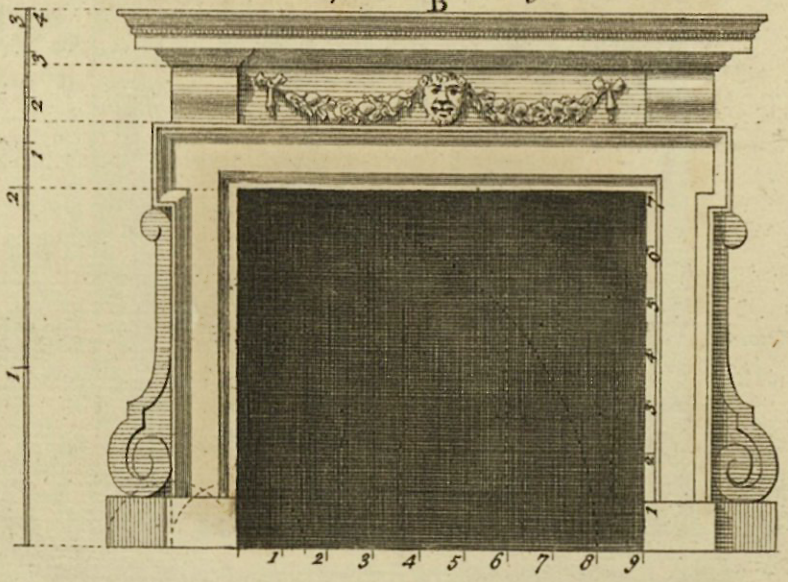
A



9
8
7
6
5
4
3
2
1
4
5
1
2
3
4
5
6

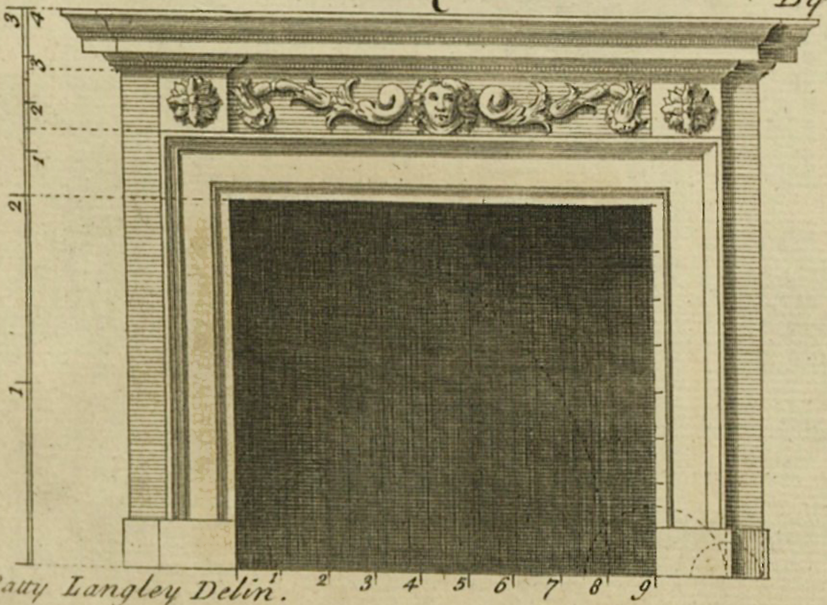
By T. Langley.

B



4
3
2
1
2
1
7
6
5
4
3
2
1
1
2
3
4
5
6
7
8
9

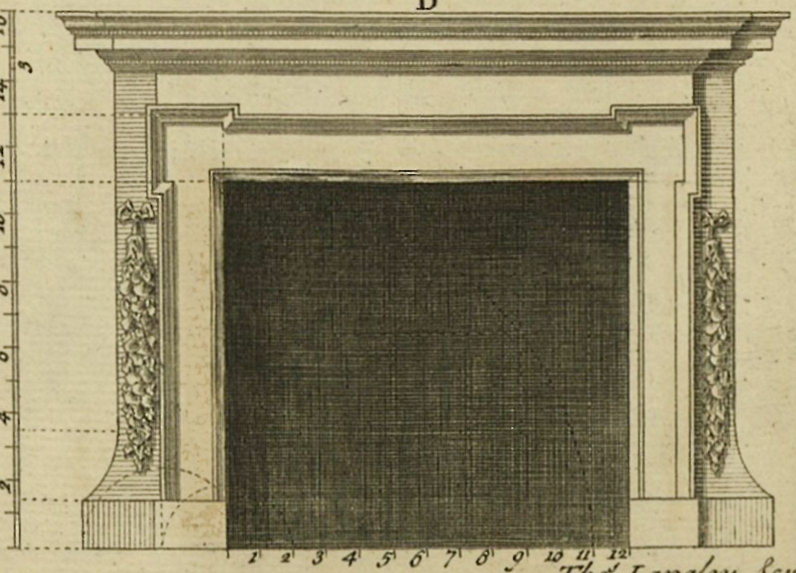
C



3
4
3
2
1
2
1
1
2
3
4
5
6
7
8
9

By T. Langley.

D

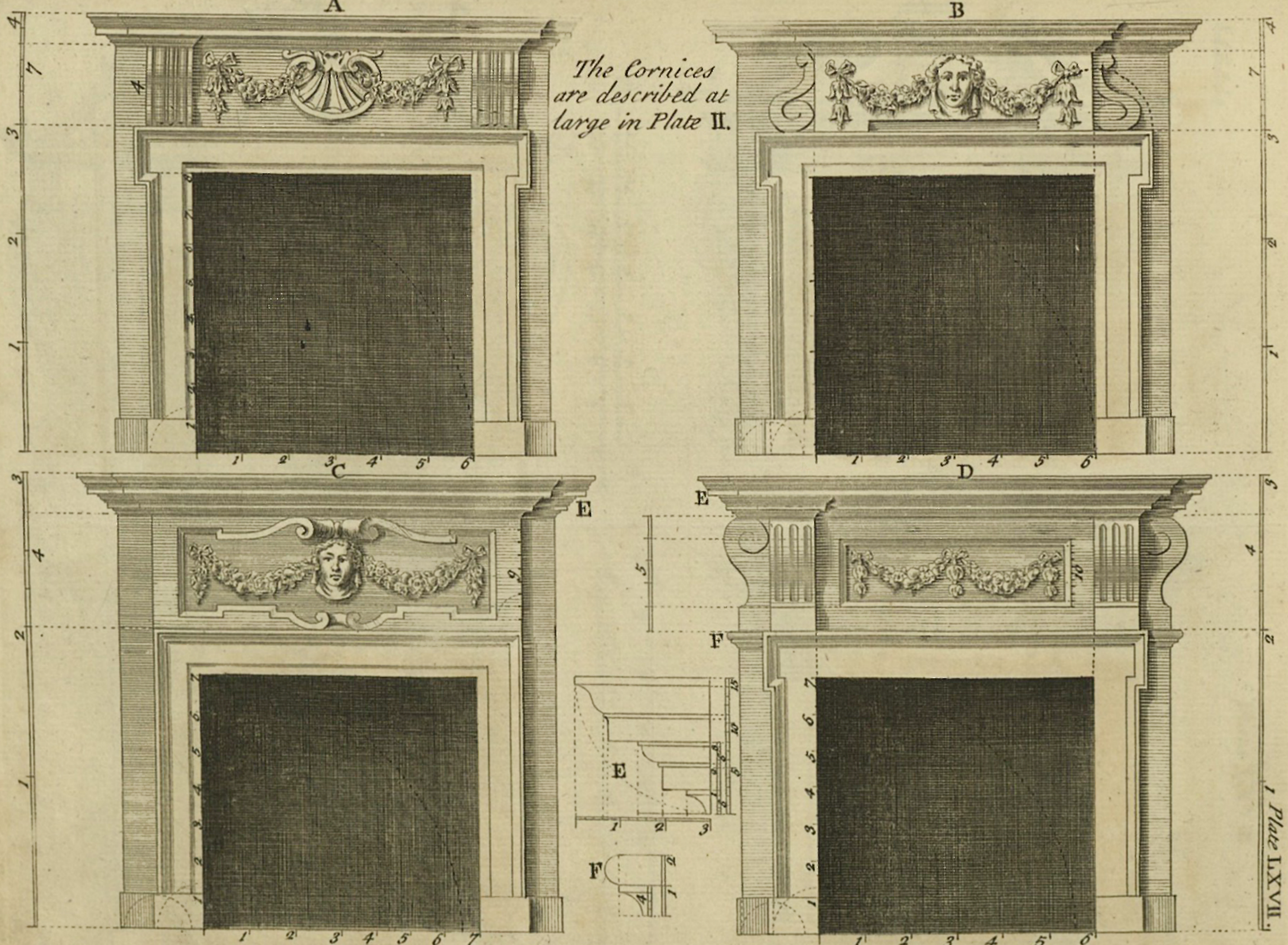


16
3
14
12
10
8
6
4
2
1
2
3
4
5
6
7
8
9
10
11
12

Plate LXVI.

Batty Langley Delin.

Thos. Langley Sculp.


A
B
C
D
E
E
F
F
1
2
3
4
5
6
7

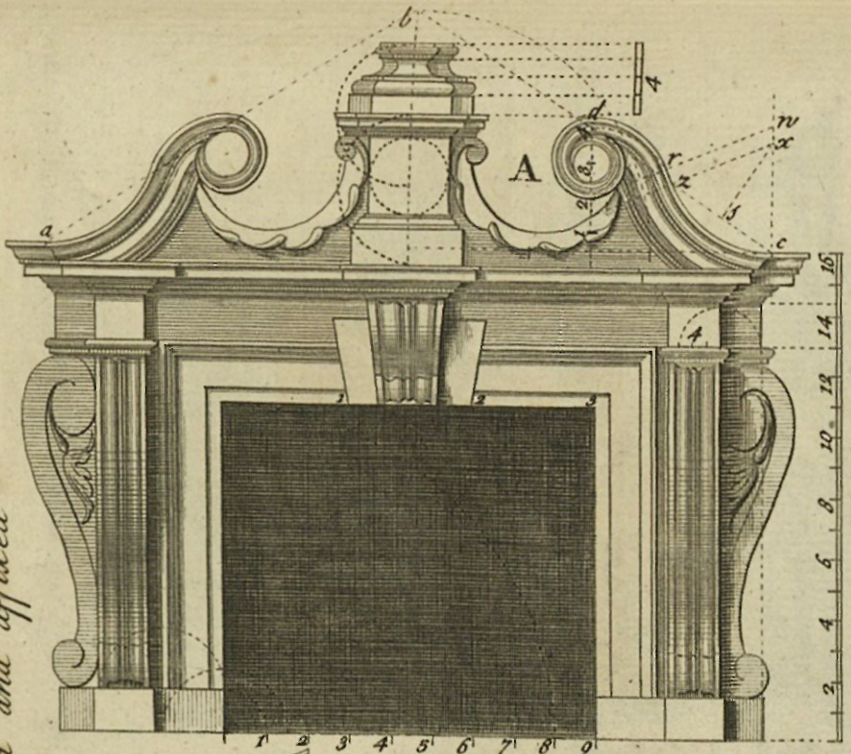
The Cornices are described at large in Plate II.

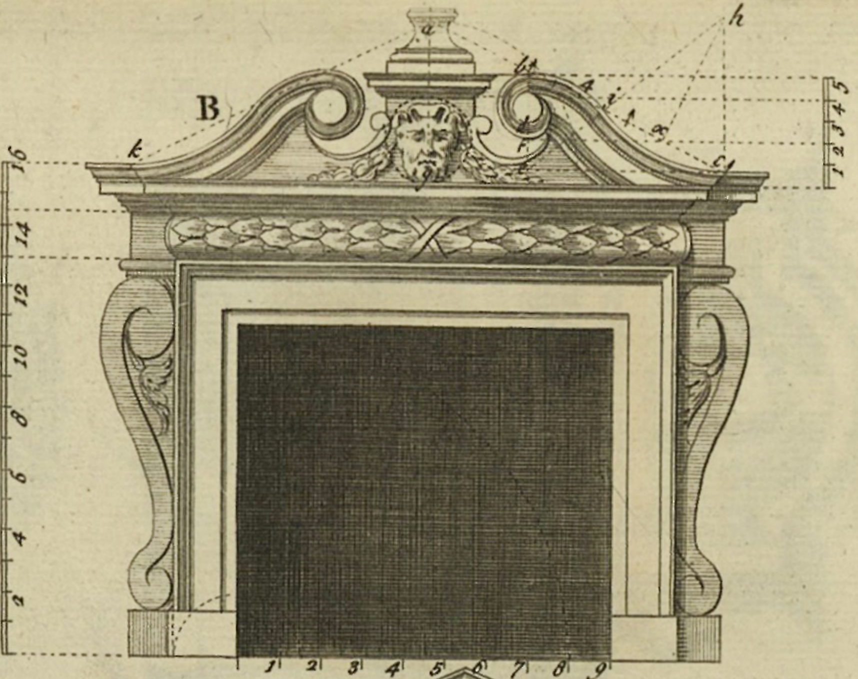
The Measures, Invented proportioned and affixed by Batty Langley 1739.

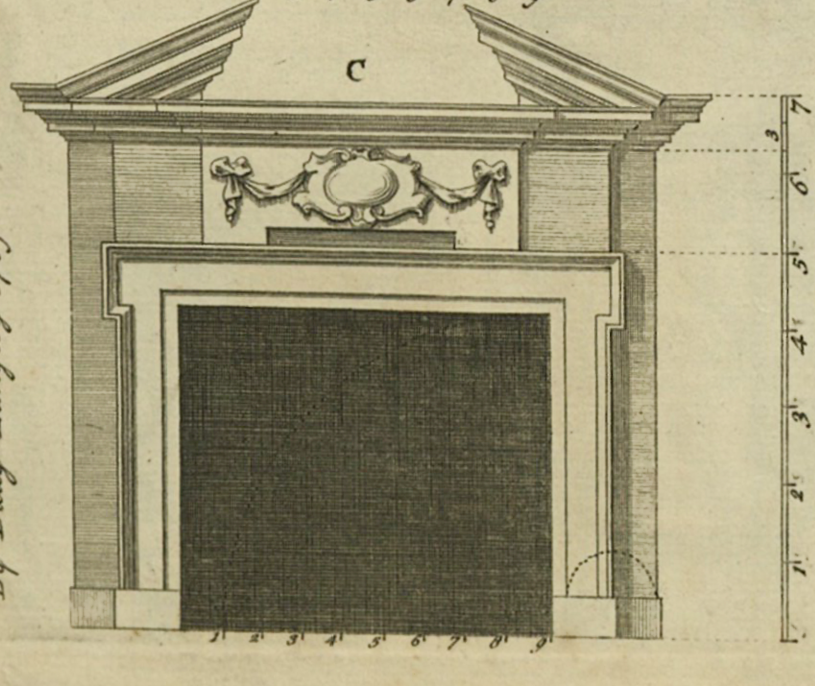
Thoˢ. Langley Sculp.

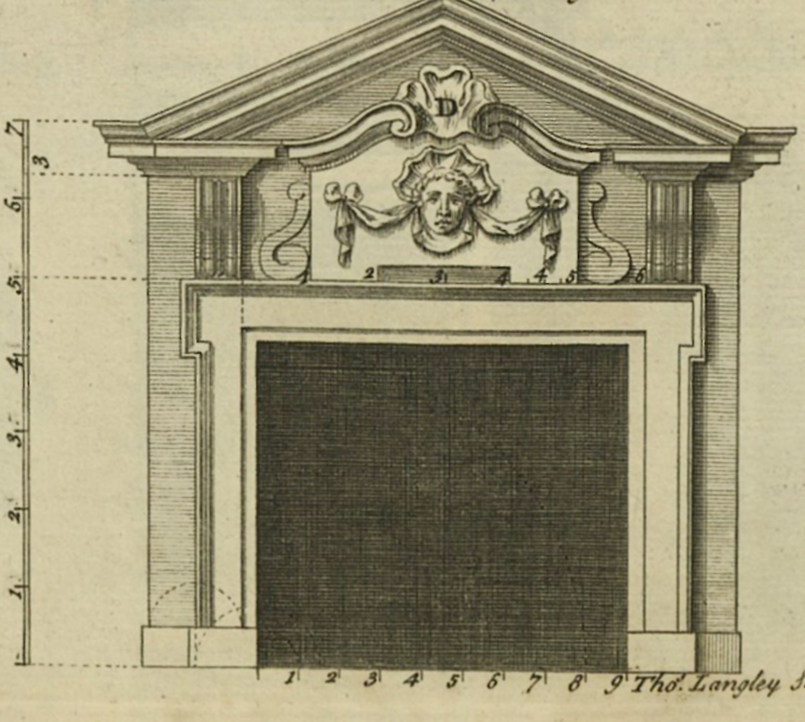
Plate LXVIII.

The Measures Invented proportioned and affixed
By Batty Langley 1739.


A
b
d
n
w
x
r
z
s
a
c
4
4
1 2 3 4 5 6 7 8 9
2 4 6 8 10 12 14 16

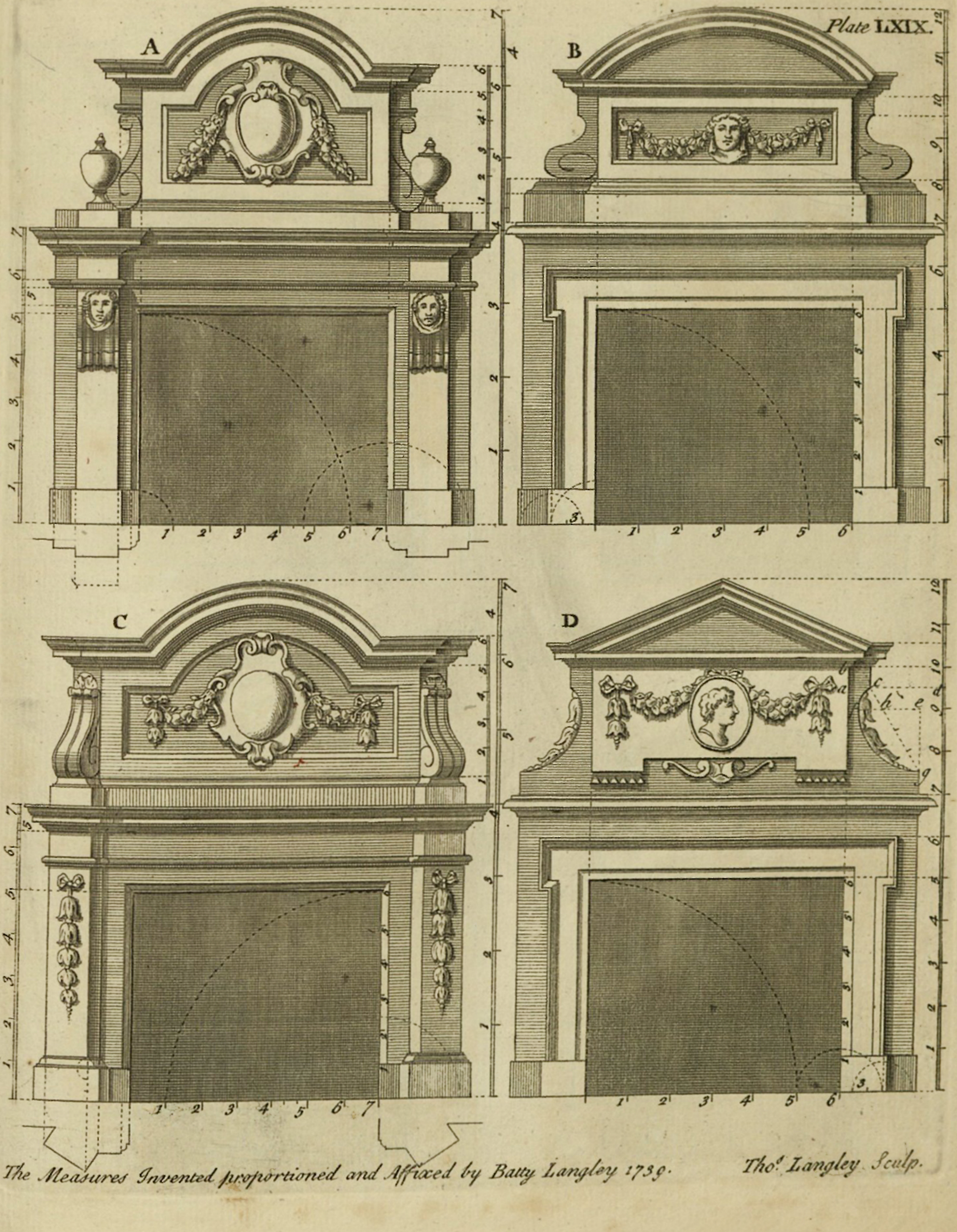

B
a
h
k
c
1 2 3 4 5
1 2 3 4 5 6 7 8 9
2 4 6 8 10 12 14 16


C
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7
3


D
1 2 3 4 5 6
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7
3

Thoˢ. Langley Sculp.

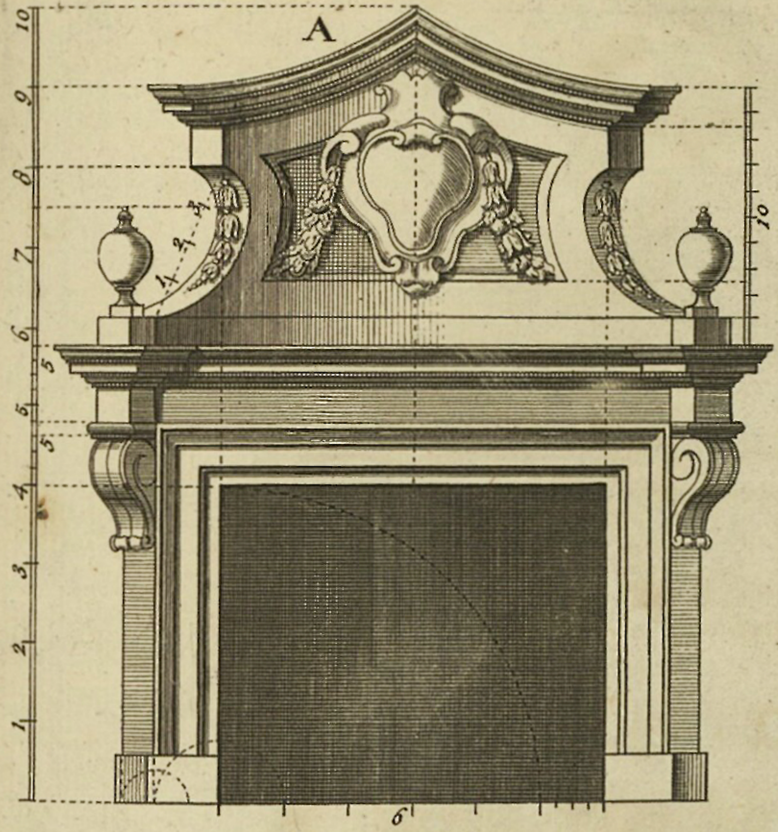
Plate LXIX.



The Measures Invented proportioned and Affixed by Batty Langley 1739. *Thoˢ. Langley Sculp.*

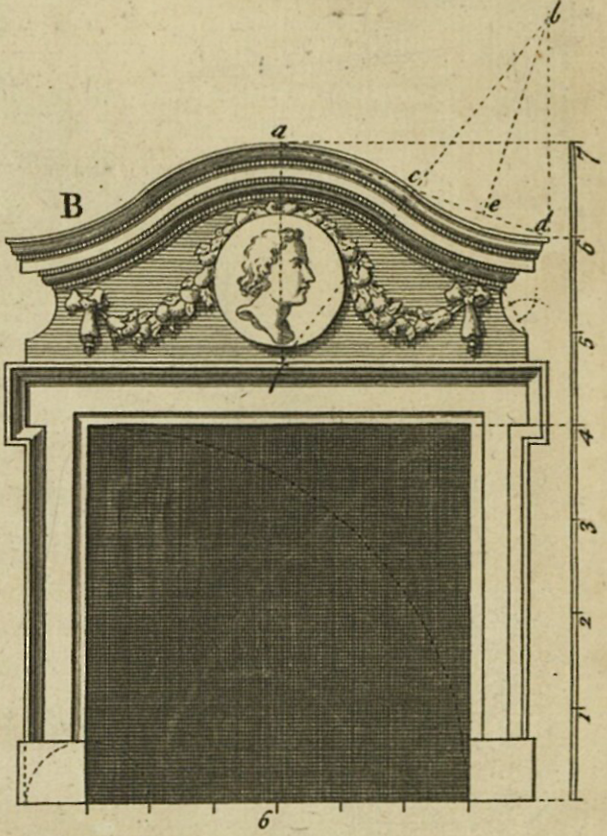
Plate LXX.

A



10
9
8
7
6
5
5
5
4
3
2
1
1
2
3
10
6

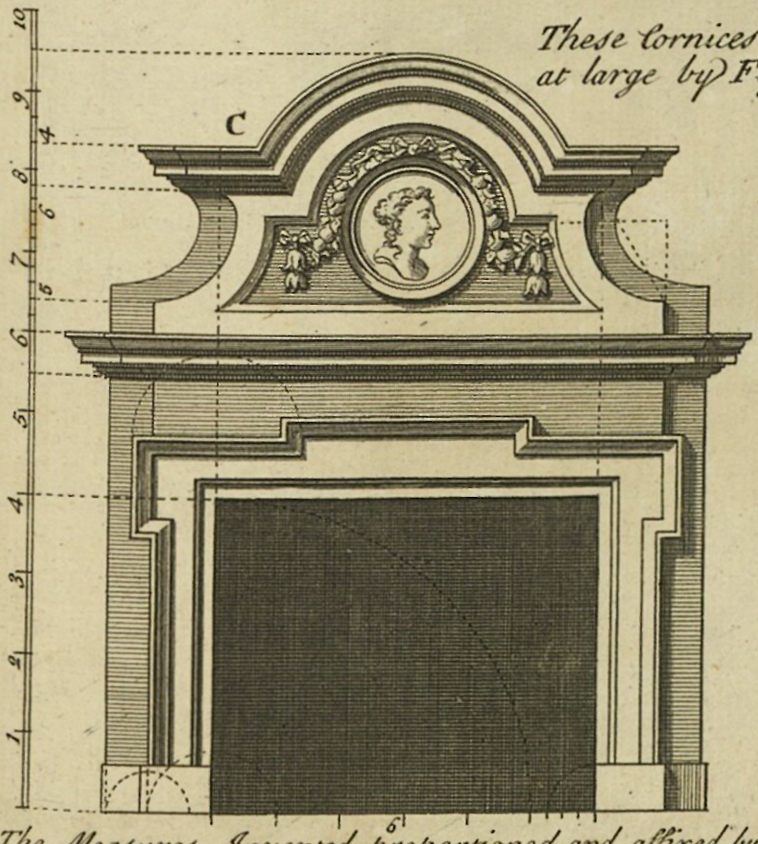
B



a
b
c
e
d
7
6
5
4
3
2
1
6

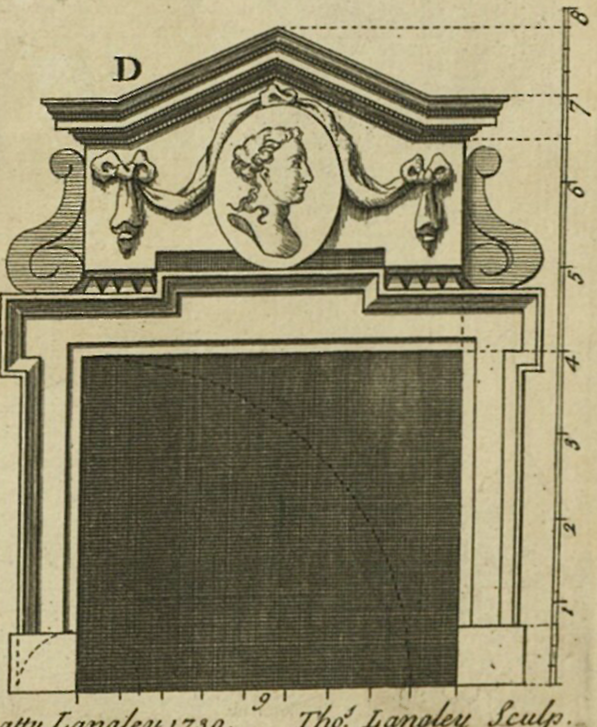
These Cornices are Expreſsed at large by Fig. E *Plate* LXIV.

C



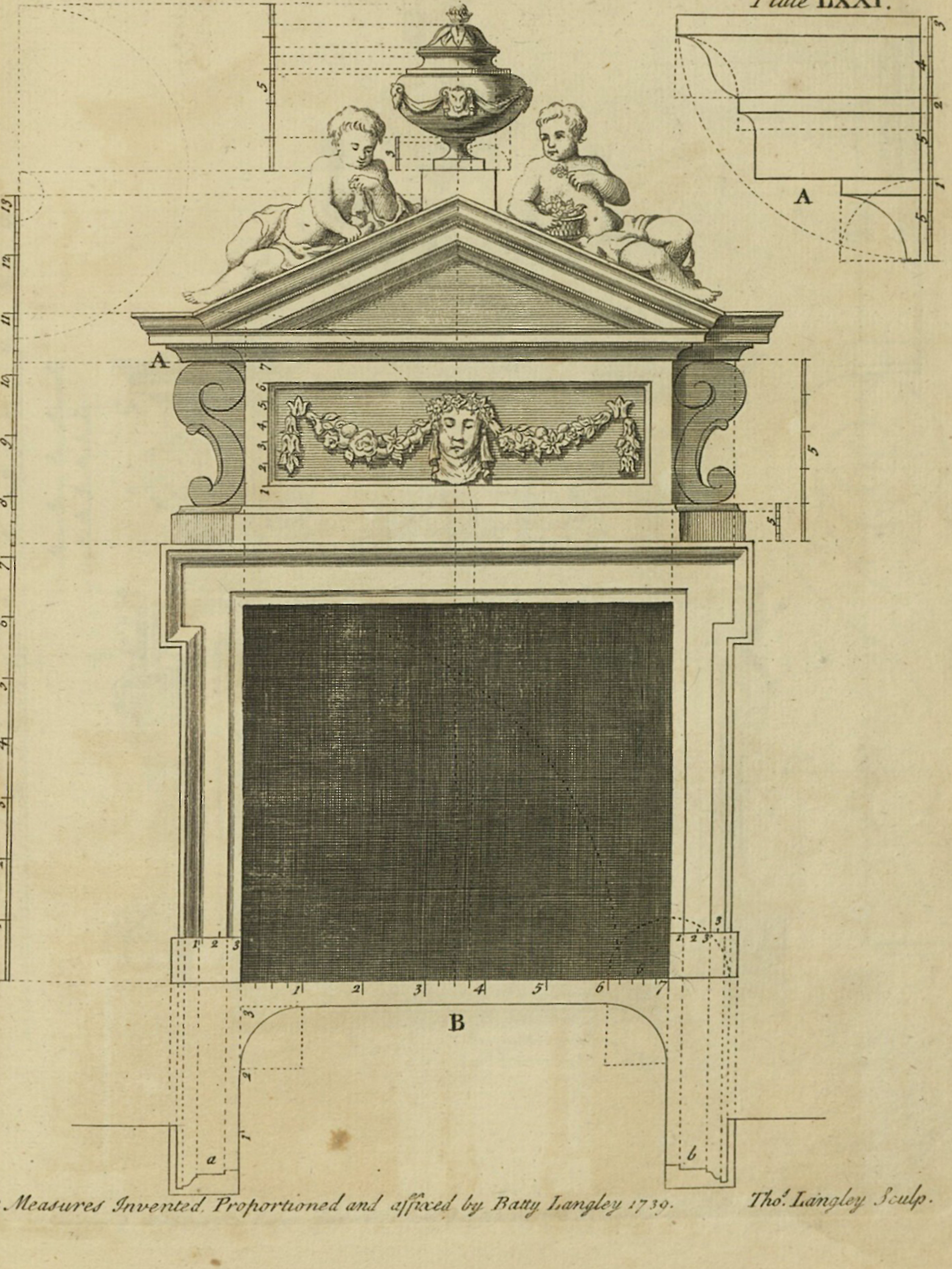
10
9
8
7
6
5
4
3
2
1
4
6
5
6

D

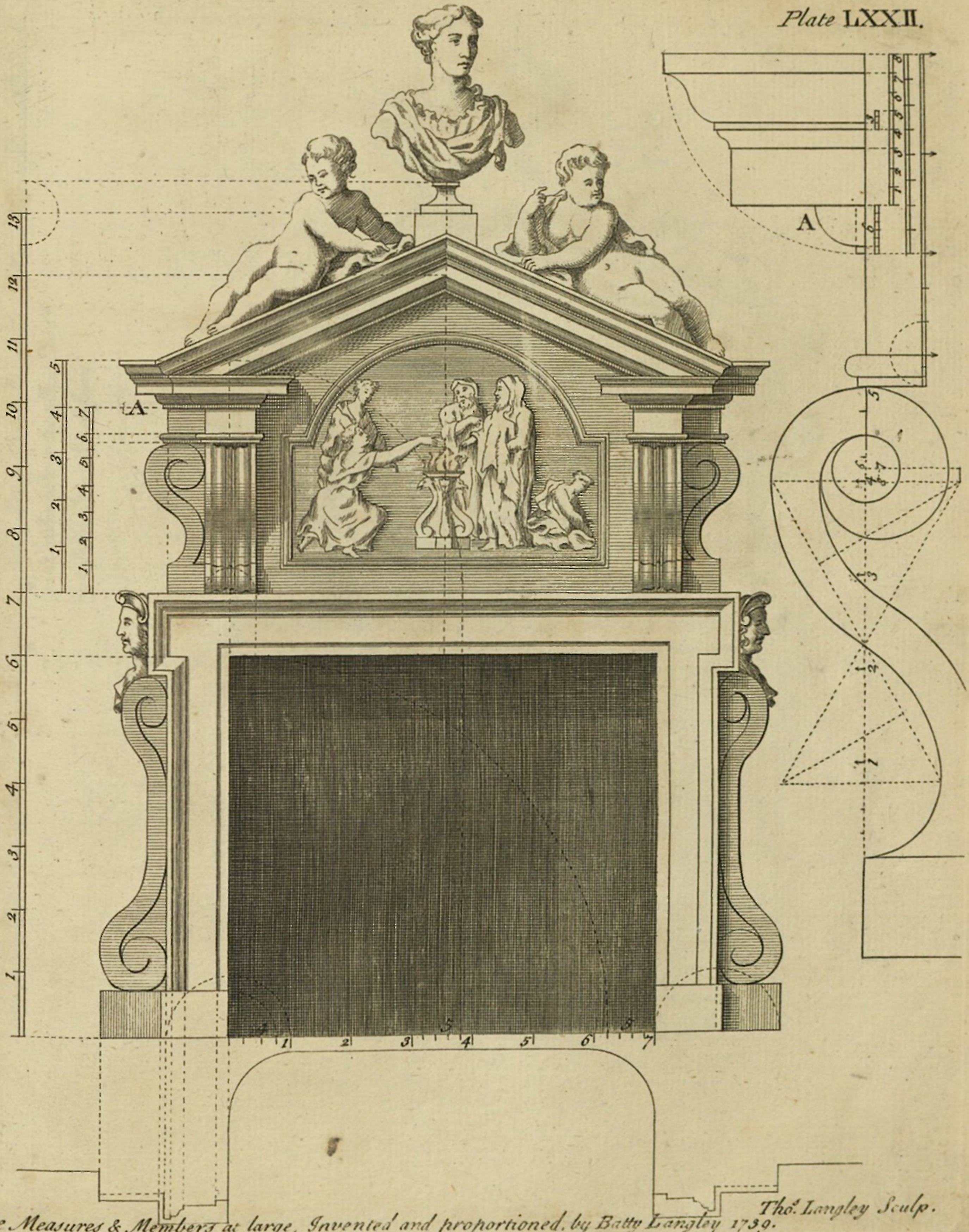


The Measures Invented proportioned and affixed by Batty Langley 1739. *Thoˢ Langley Sculp.*

Plate LXXI.


A
A
B
a
b
1 2 3 4 5 6 7 8 9 10 11 12 13
1 2 3 4 5 6 7

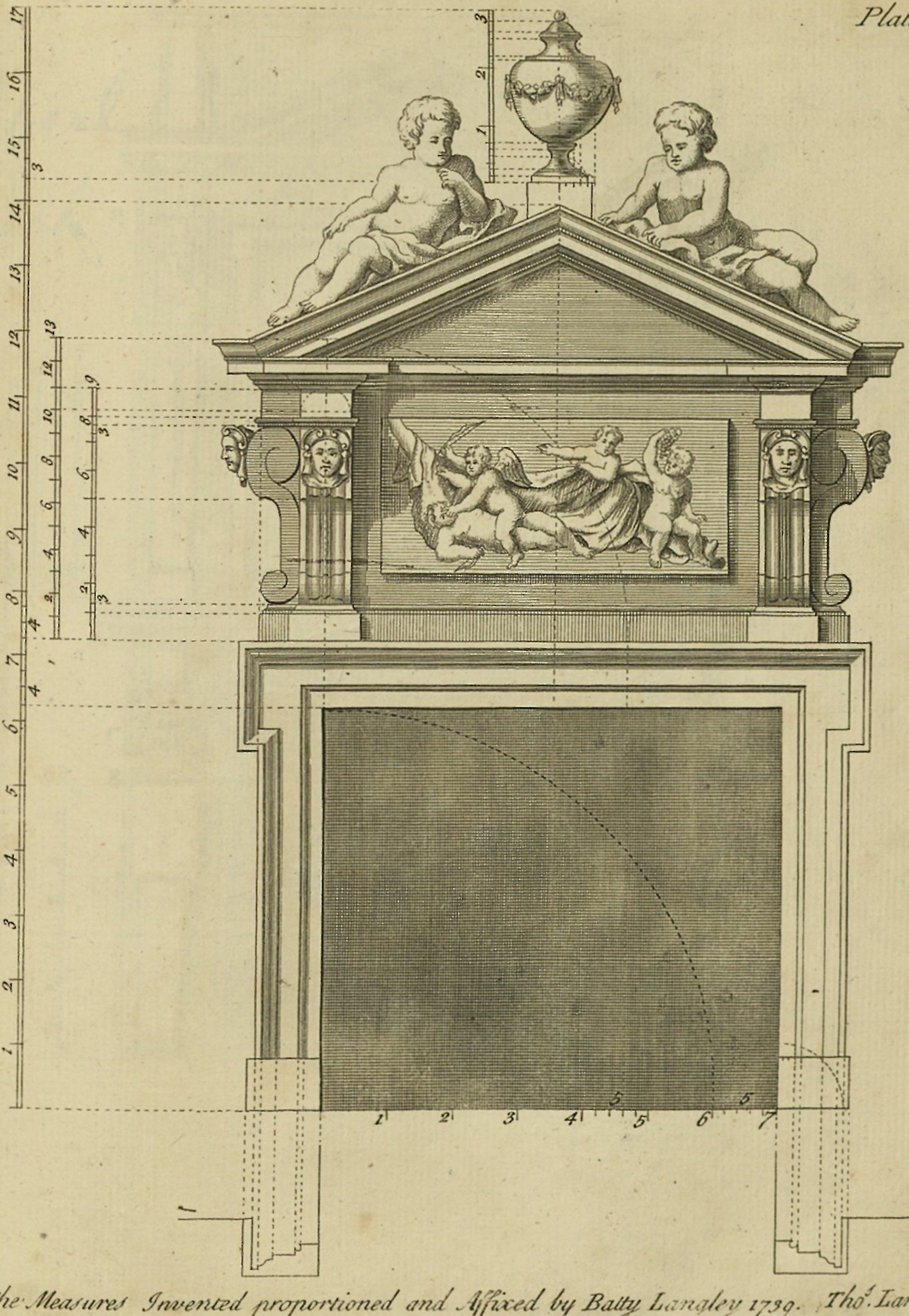
The Measures Invented, Proportioned and affixed by Batty Langley 1739. *Thos. Langley Sculp.*


A
A
13
12
11
10
9
8
7
6
5
4
3
2
1
1
2
3
4
5
6
7

The Measures & Members at large. Invented and proportioned, by Batty Langley 1739.

Thoˢ. Langley Sculp.

Plate LXXIII.


17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
1
2
3
4
5
6
7

The Measures Invented proportioned and Affixed by Batty Langley 1739. Thos. Langley Sculp.

IN & MILLS.

POULTRY

TON 9, MASS.

BOST

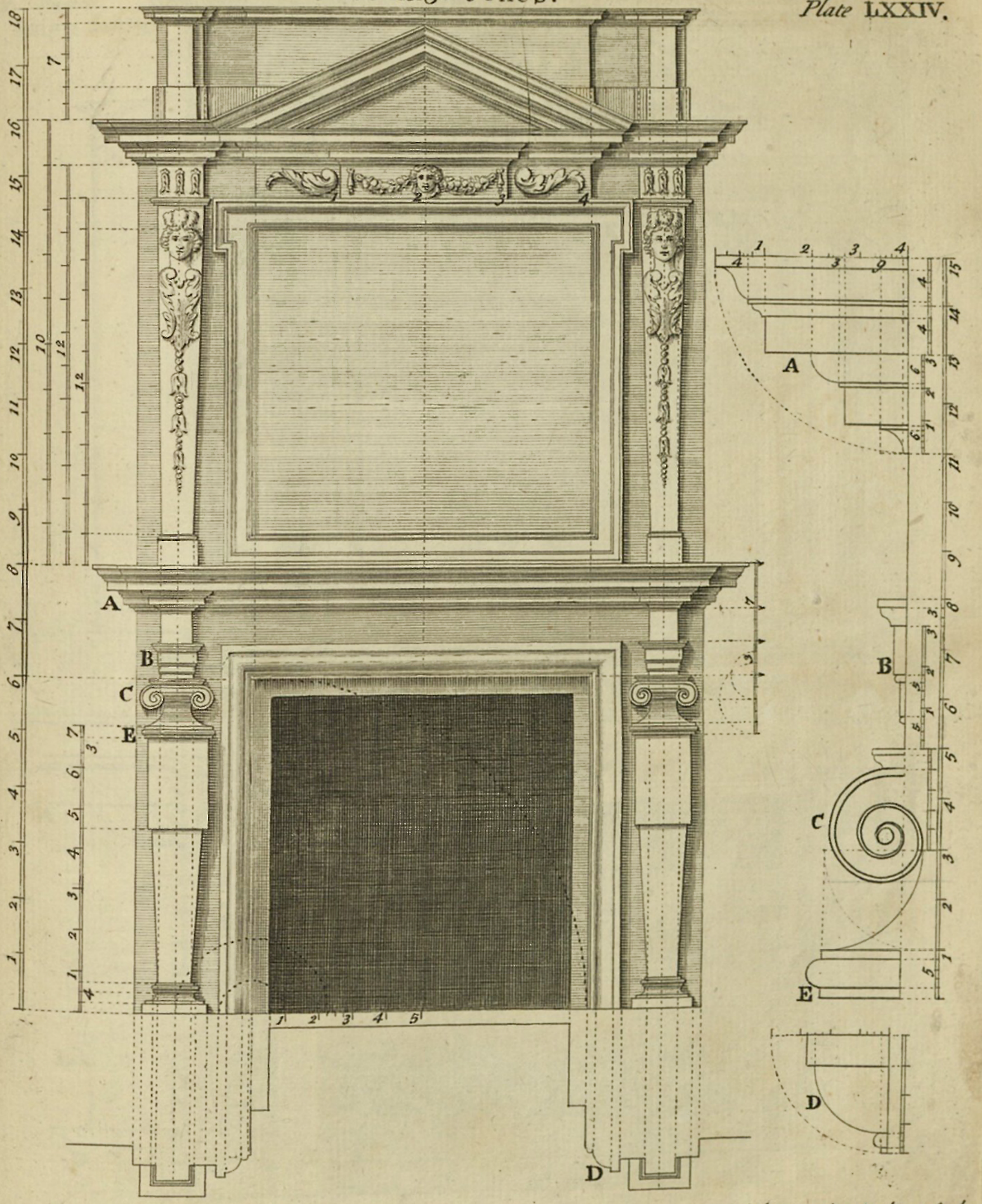
19

Albert

Park

From Inigo Jones.

Plate LXXIV.

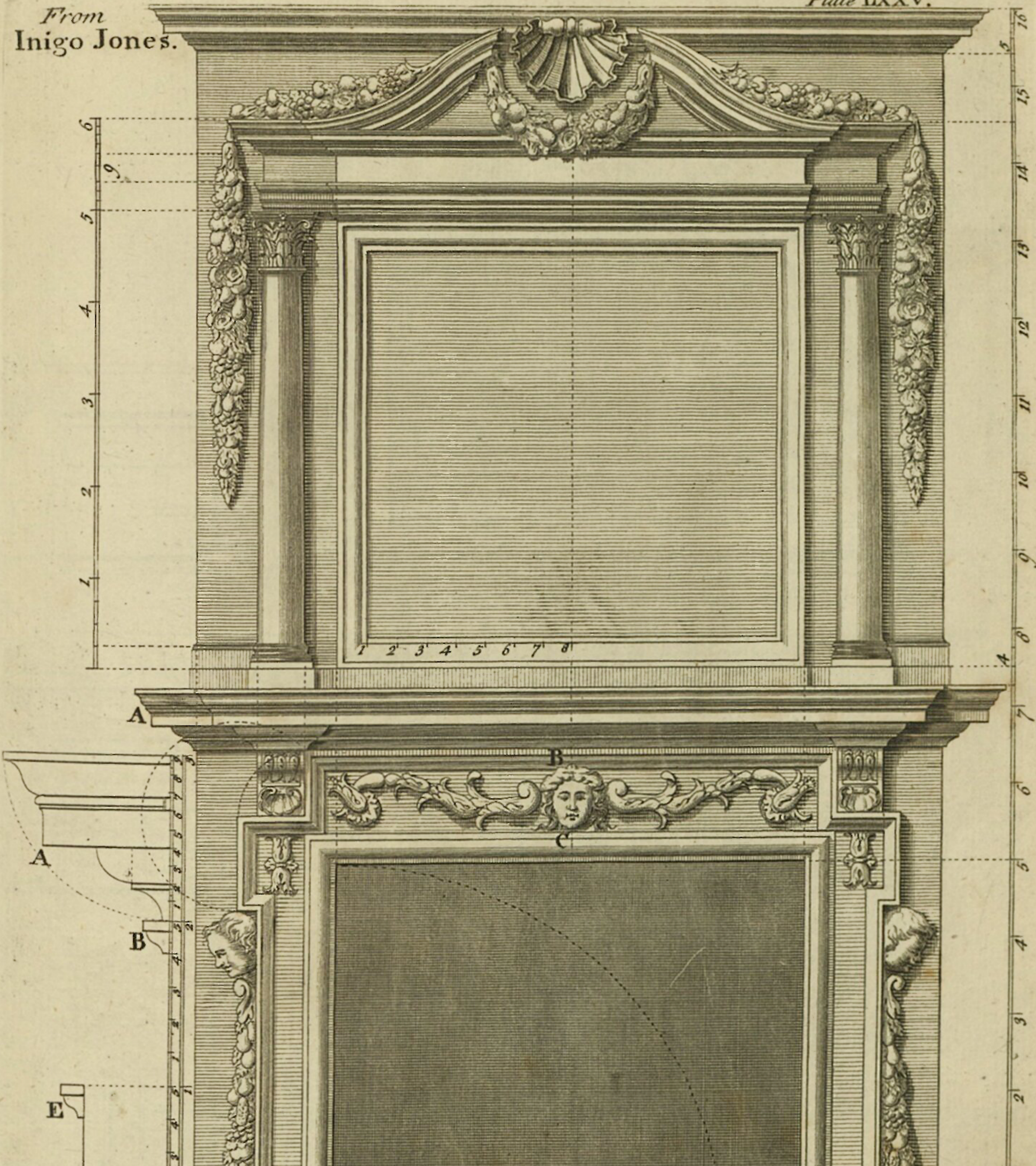


The Measures Invented proportioned & affixed by Batty Langley.

Thoˢ. Langley Delin & Sculp.

Plate LXXV.

From
Inigo Jones.

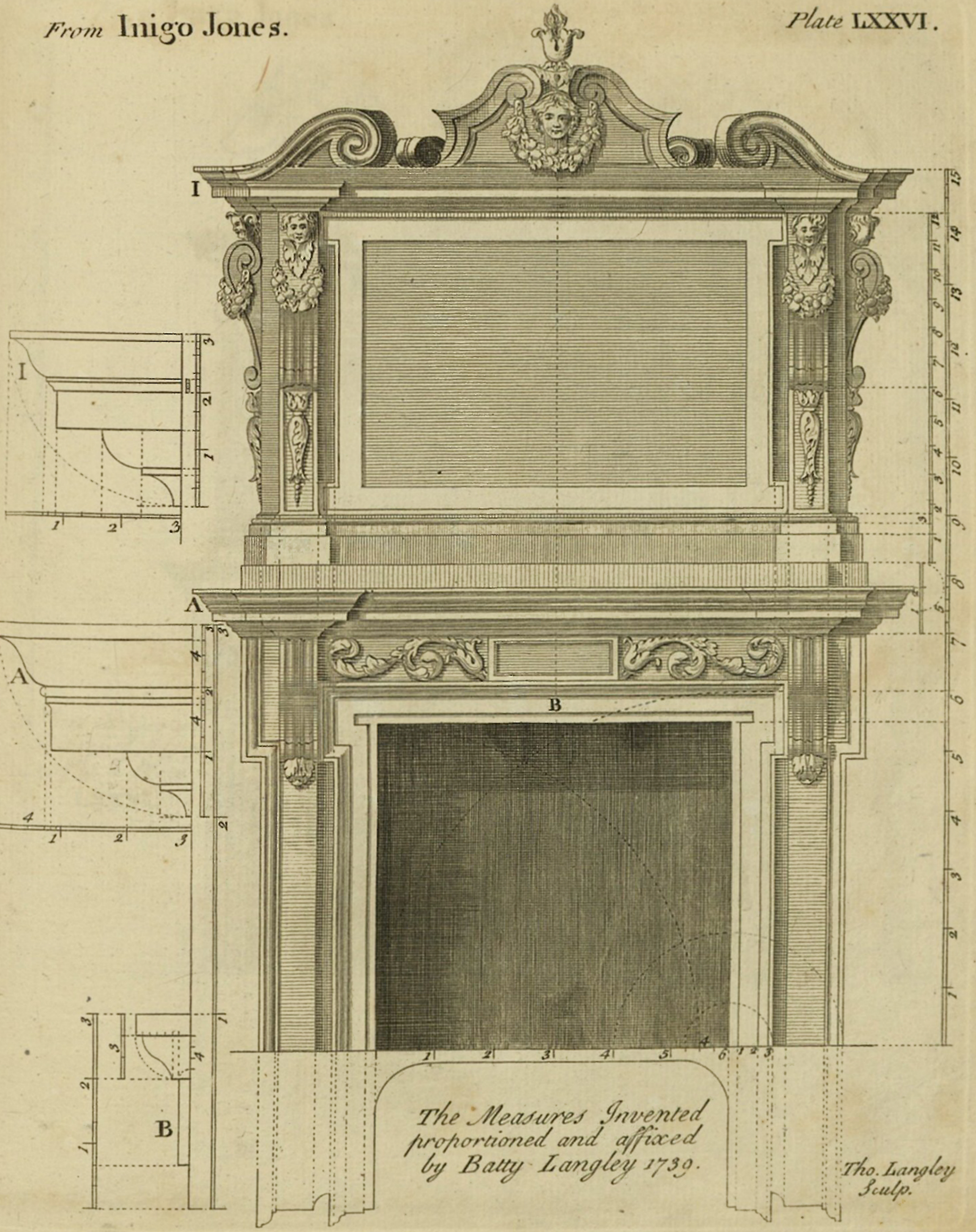

A
B
C
A
B
E
D
C
E
D
1 2 3 4 5 6 7 8
1 2 3 4 5 6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1 2 3 4 5 6 7
1 2 3 4 5 6

The Measures Invented proportioned & affixed by B. Langley 1739.

T. Langley sculp.

From Inigo Jones.

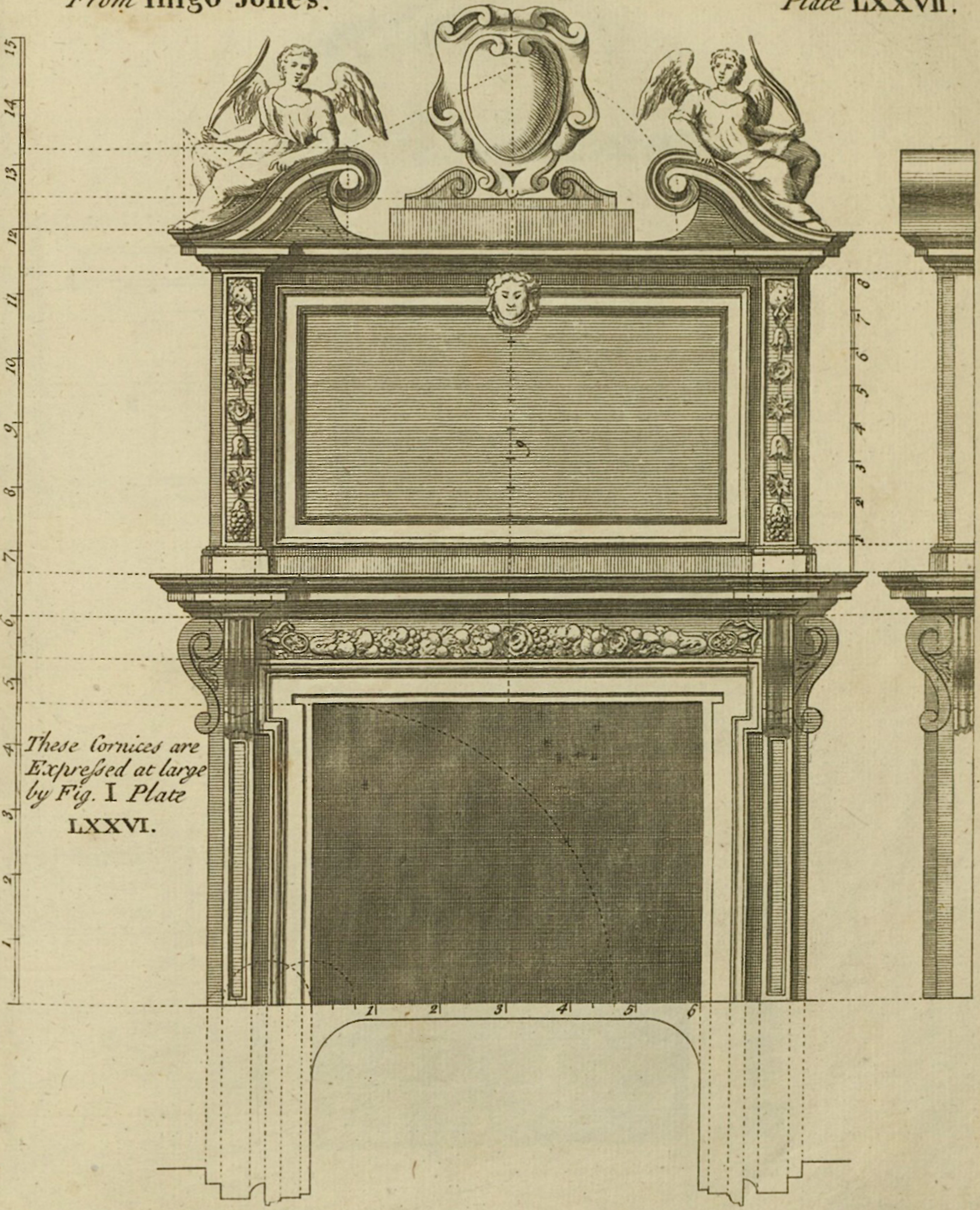
Plate LXXVI.



The Measures Invented proportioned and affixed by Batty Langley 1739.

Tho. Langley Sculp.

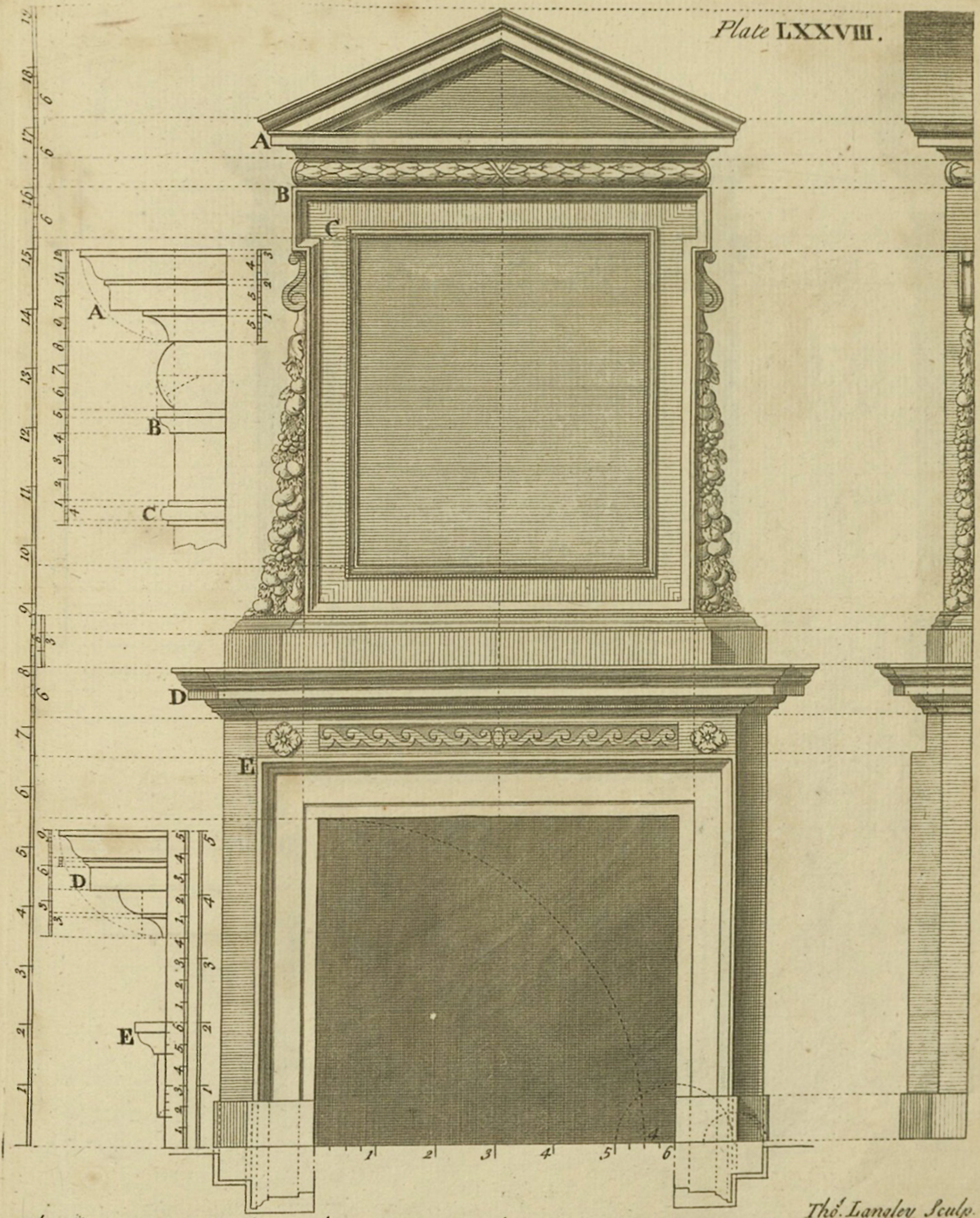
From **Inigo Jones.** *Plate* **LXXVII.**


These Cornices are Expreſsed at large by Fig. I *Plate* LXXVI.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
1
2
3
4
5
6
7
8
1
2
3
4
5
6

The Measures Invented and proportioned by Batty Langley 1739. *Thoˢ. Langley Sculp.*

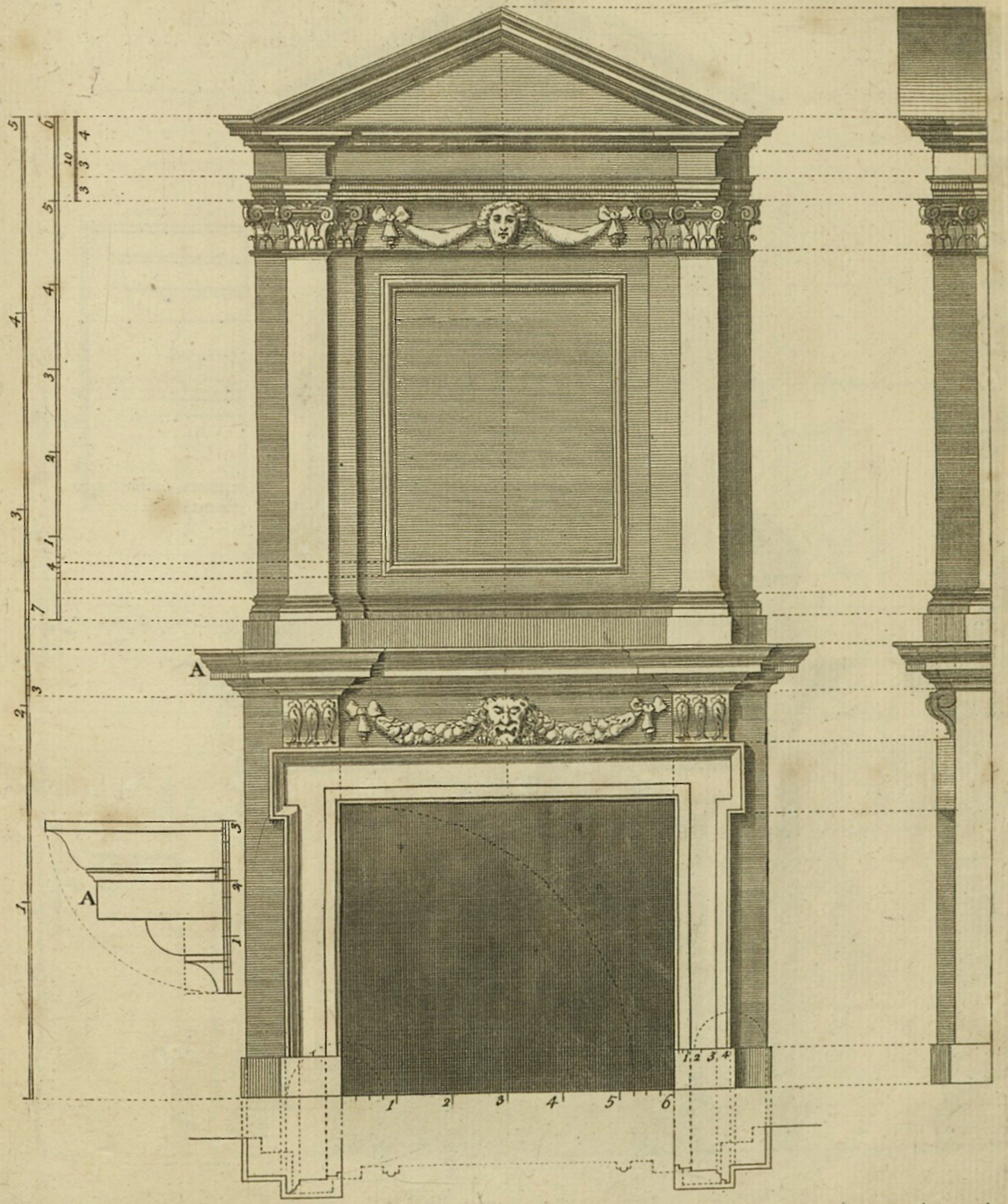
Plate LXXVIII.


A
B
C
D
E
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Thoˢ. Langley Sculp.

The Measures and Members at large Invented and proportioned by Batty Langley 1739.

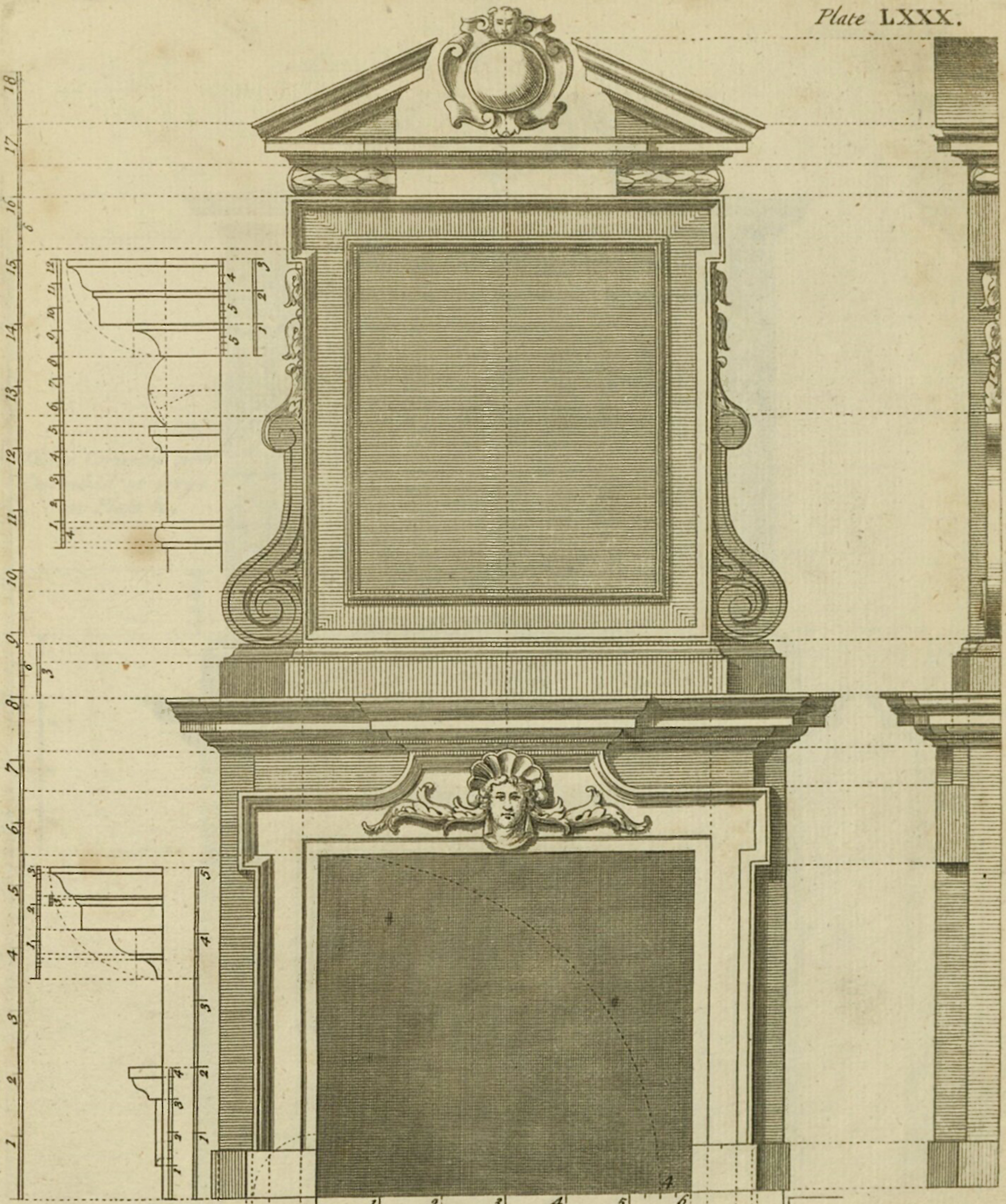
Plate LXXIX.


A
A
1 2 3 4
1 2 3 4 5 6
5 4 3 2 1
5 4 3 2 1 4 7 3
6 4 10 3 3 3 3
3 4 1

The Measures Invented proportioned and affixed By Batty Langley 1739.

Thos. Langley Sculp.

2nd


18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
1
2
3
4
5
6

Thomas Langley Invent. Delin. & Sculp. 1739.

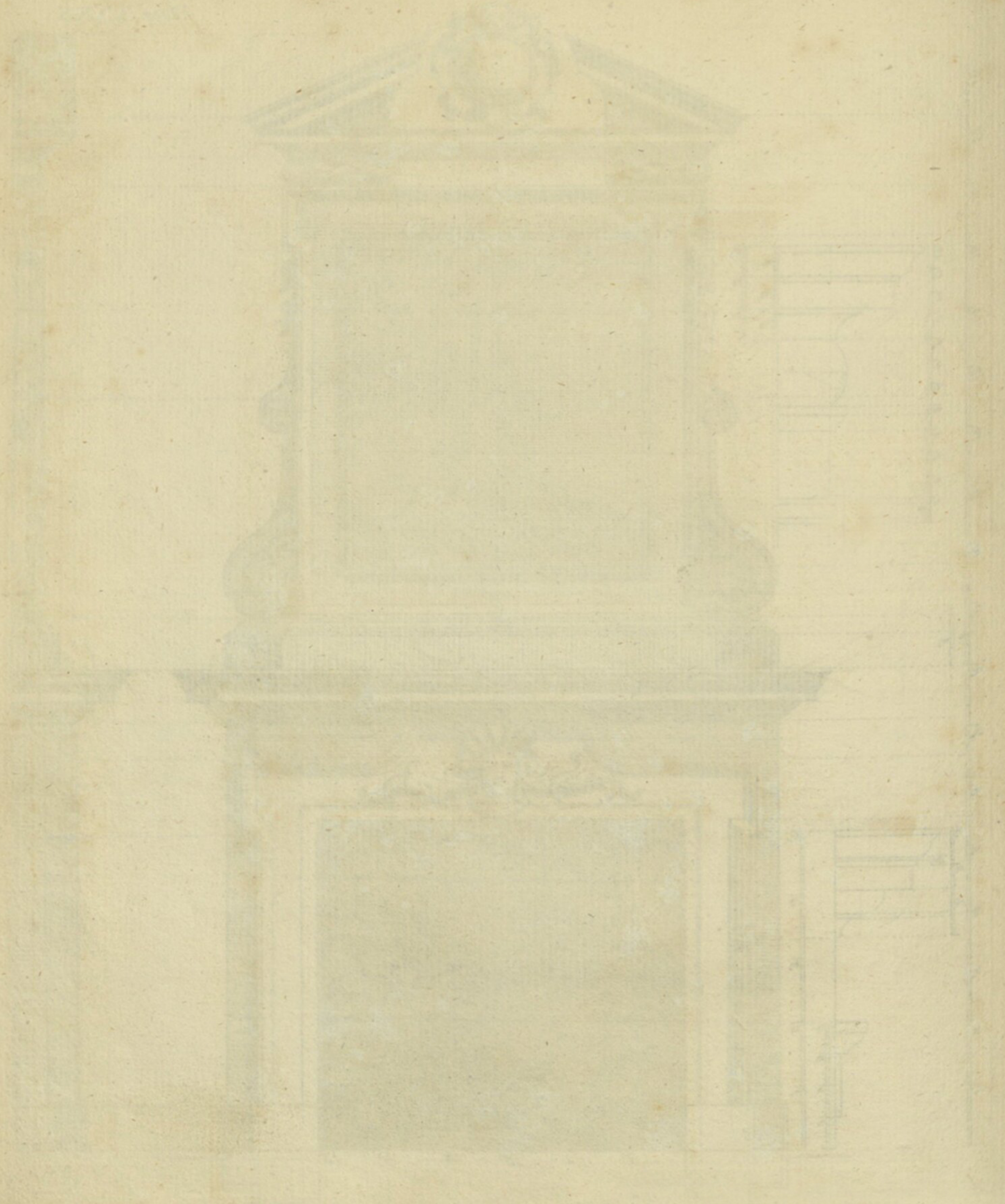
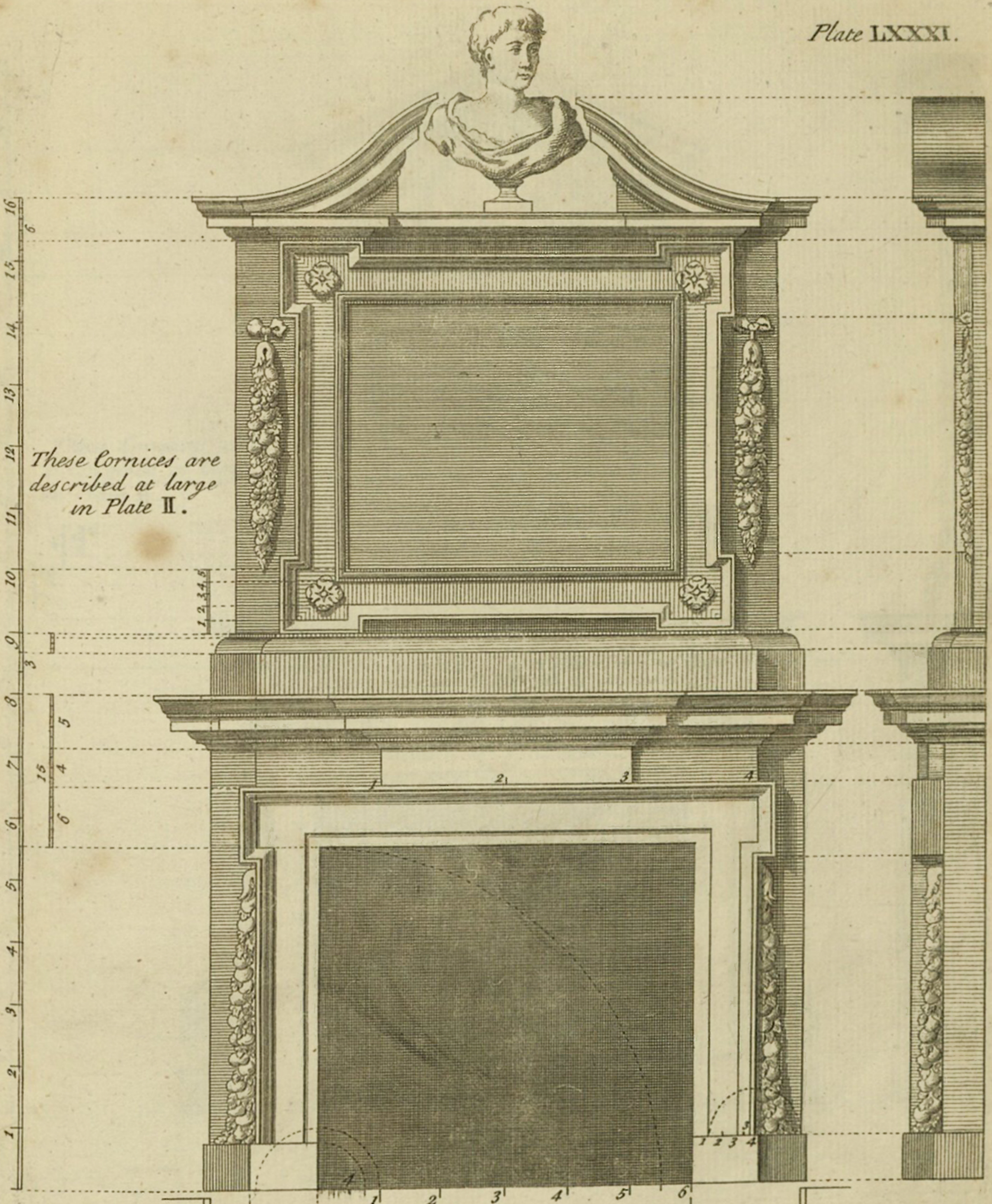


Plate LXXXI.

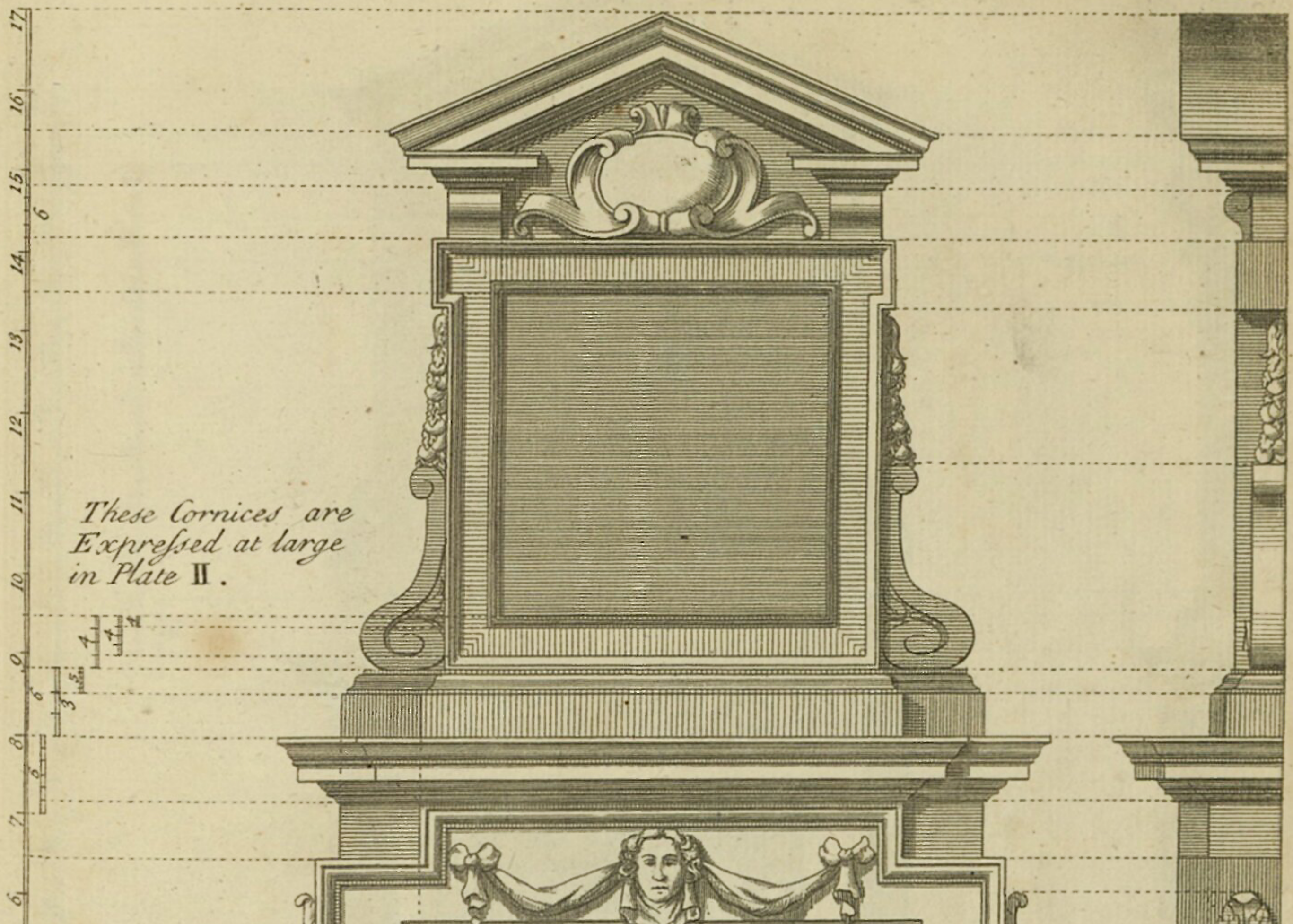


16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
1 2 3 4 5
15
1 2 3 4
1 2 3 4 5 6

These Cornices are described at large in Plate II.

Thoˢ Langley Invent Delin. and Sculp. 1739.

Plate LXXXII.


17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
1
2
3
4
5
6

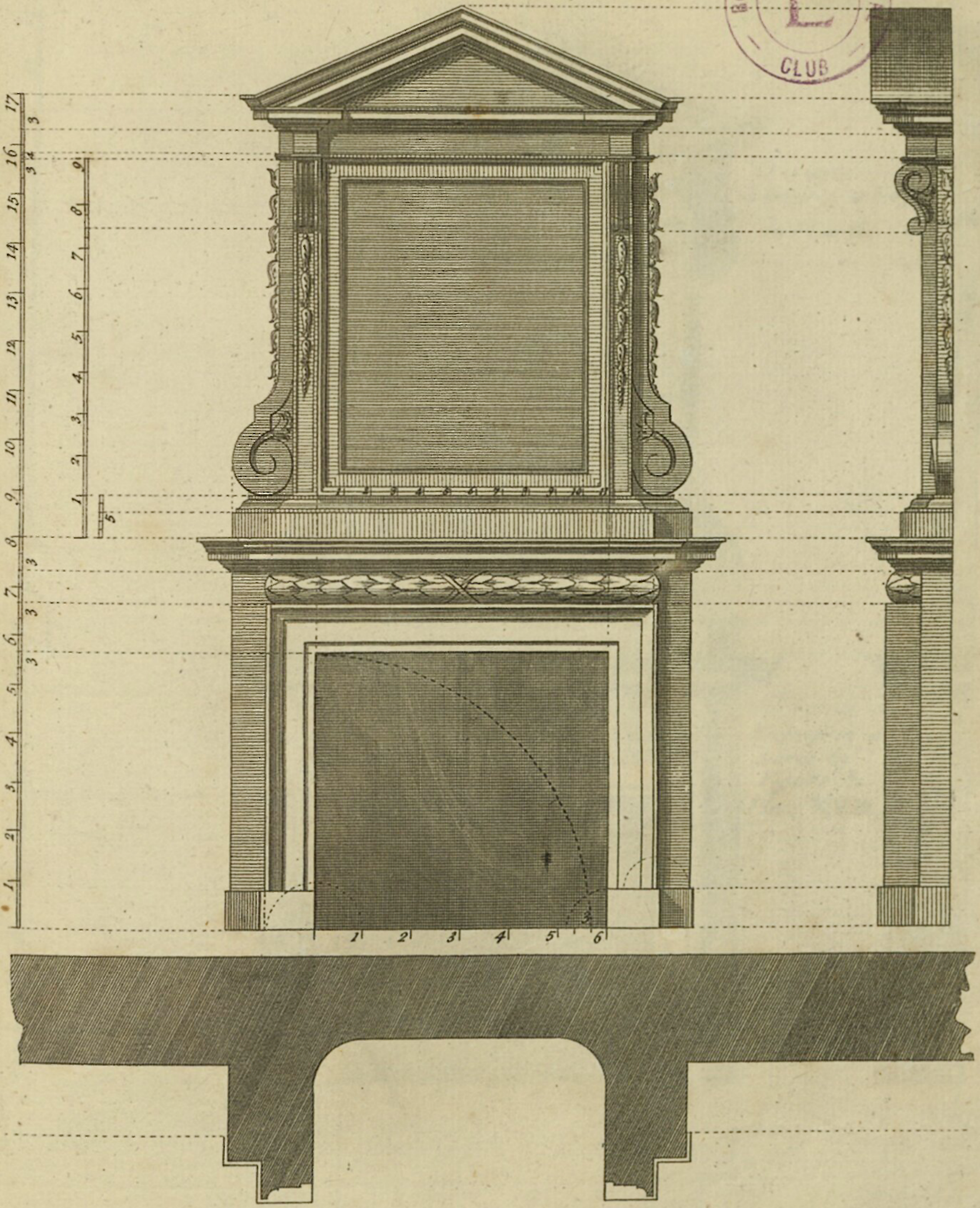
These Cornices are Expreſsed at large in Plate II.

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

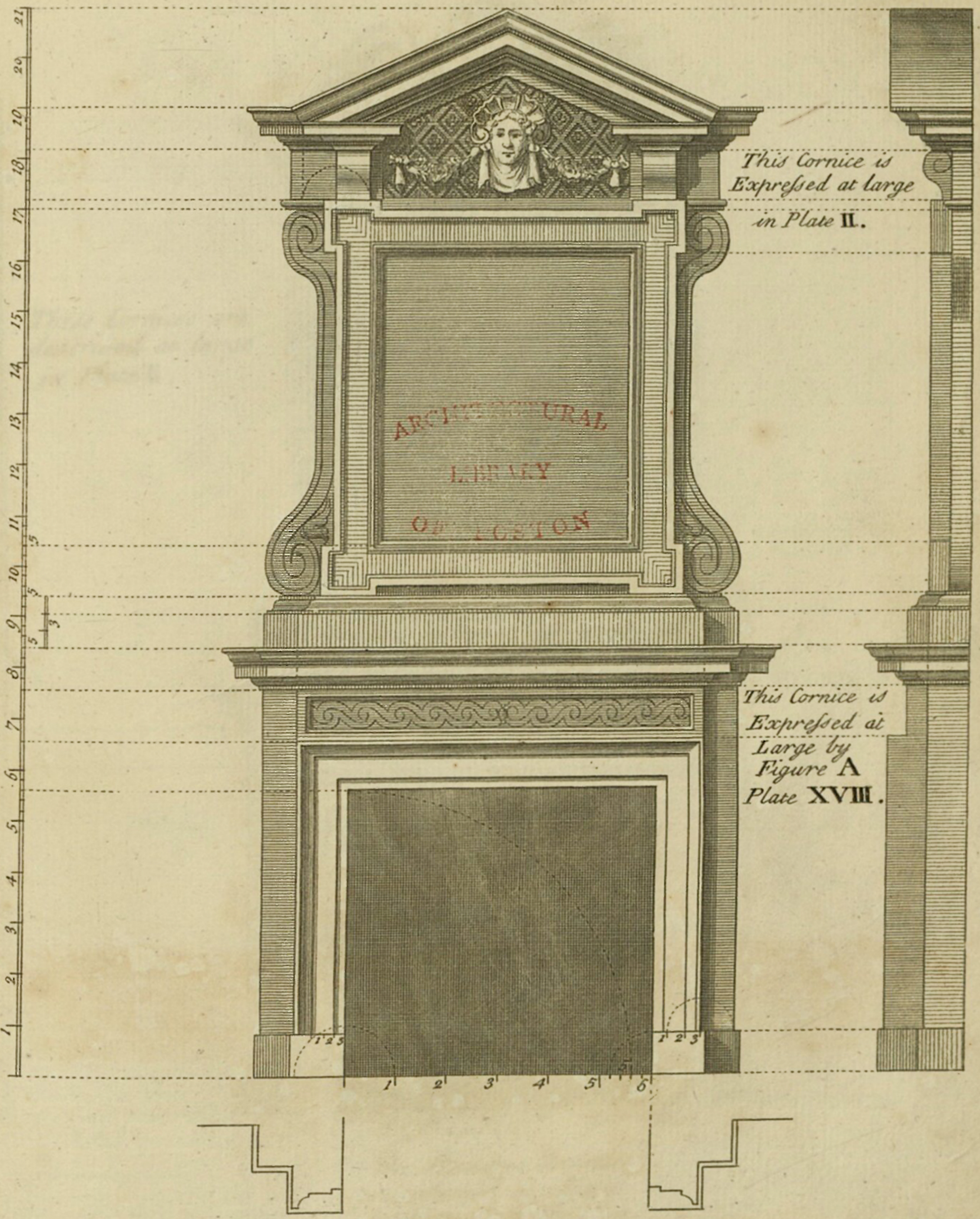
BOSTON ARCHITECTURAL CLUB
L

Plate LXXXIII.


17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
3
3
3
3
3
3 2
9
8
7
6
5
4
3
2
1
5
1
2
3
4
5
6
7
8
9
10
11
1
2
3
4
5
6
3

The Measures Invented, proportioned and affixed by Batty Langley 1739. *Thoˢ. Langley Delin. & Sculp.*

Plate LXXXIV.

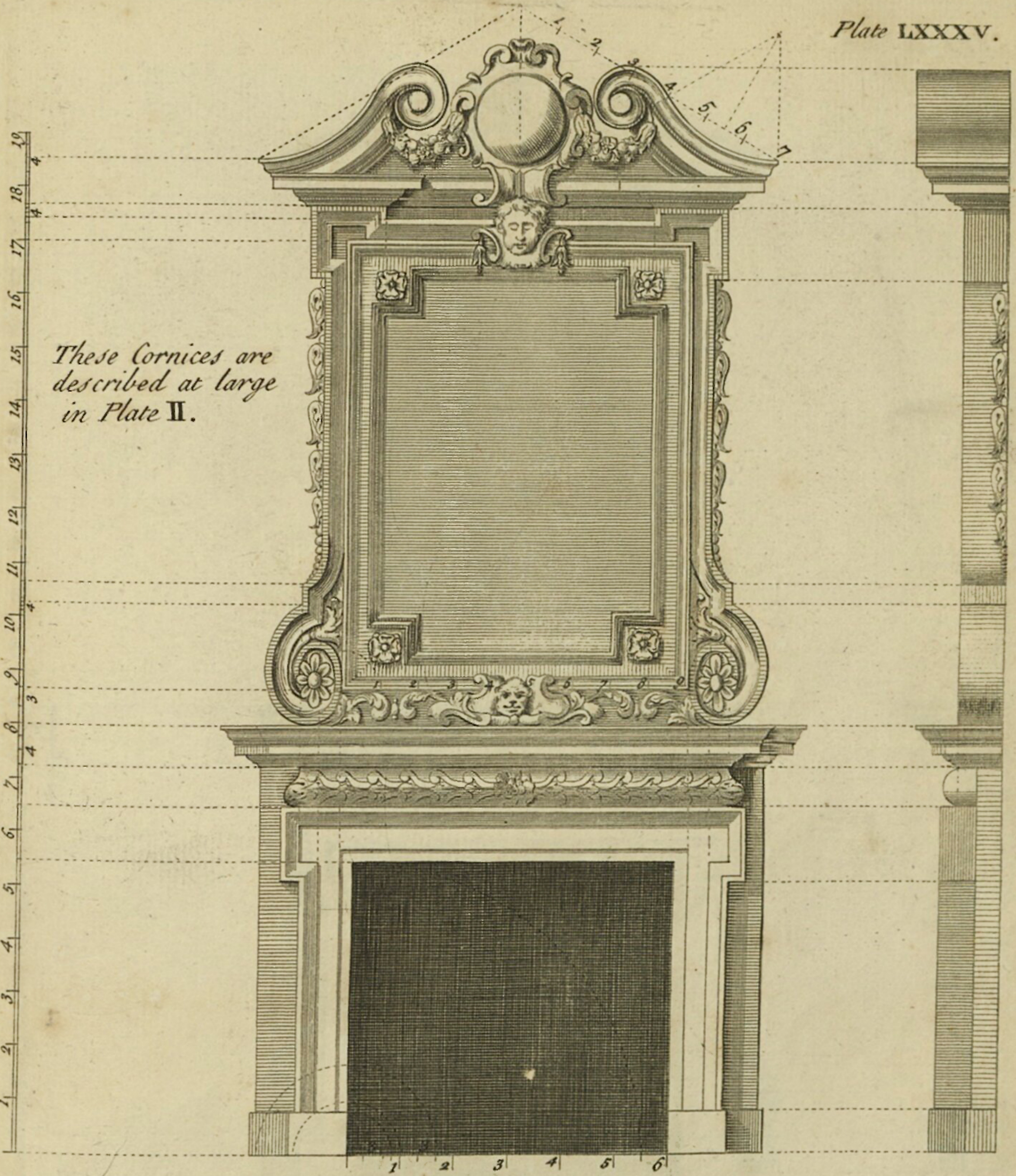

21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
5
5
3
5
This Cornice is Expreſsed at large in Plate II.
This Cornice is Expreſsed at Large by Figure A Plate XVIII.
1 2 3
1 2 3
1
2
3
4
5
6

ARCHITECTURAL LIBRARY OF BOSTON

The Measures Invented, proportioned and affixed by Batty Langley 1739.

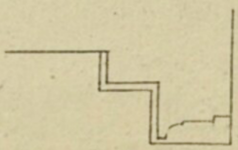
Thoˢ. Langley Delin. & Sculp.

Plate LXXXV.

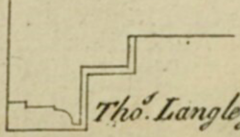


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
1
2
3
4
5
6
7
8
9
1
2
3
4
5
6
1
2
3
4
5
6
7

These Cornices are described at large in Plate II.

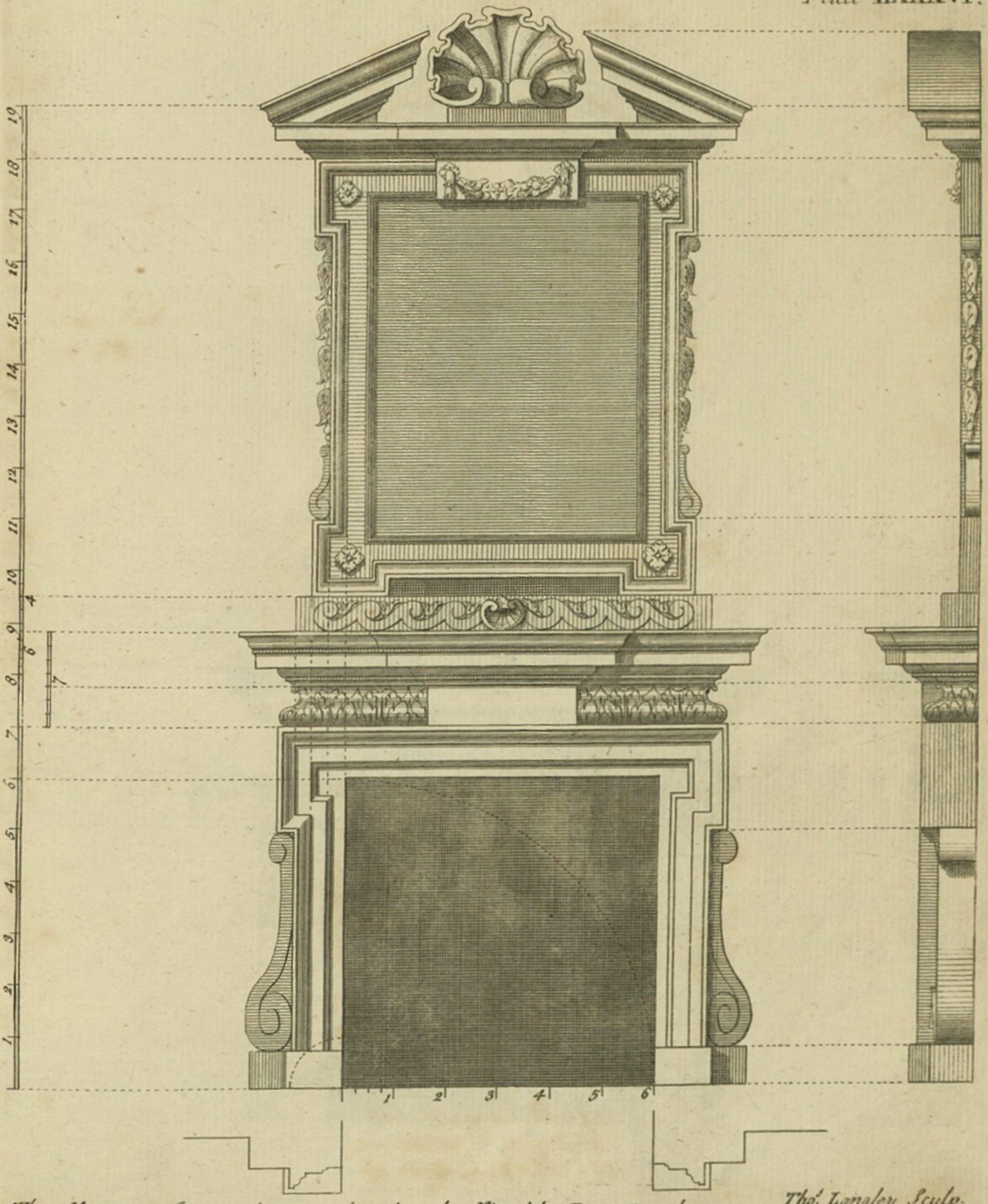


The Measures Invented, proportioned & affixed by Batty Langley 1739.



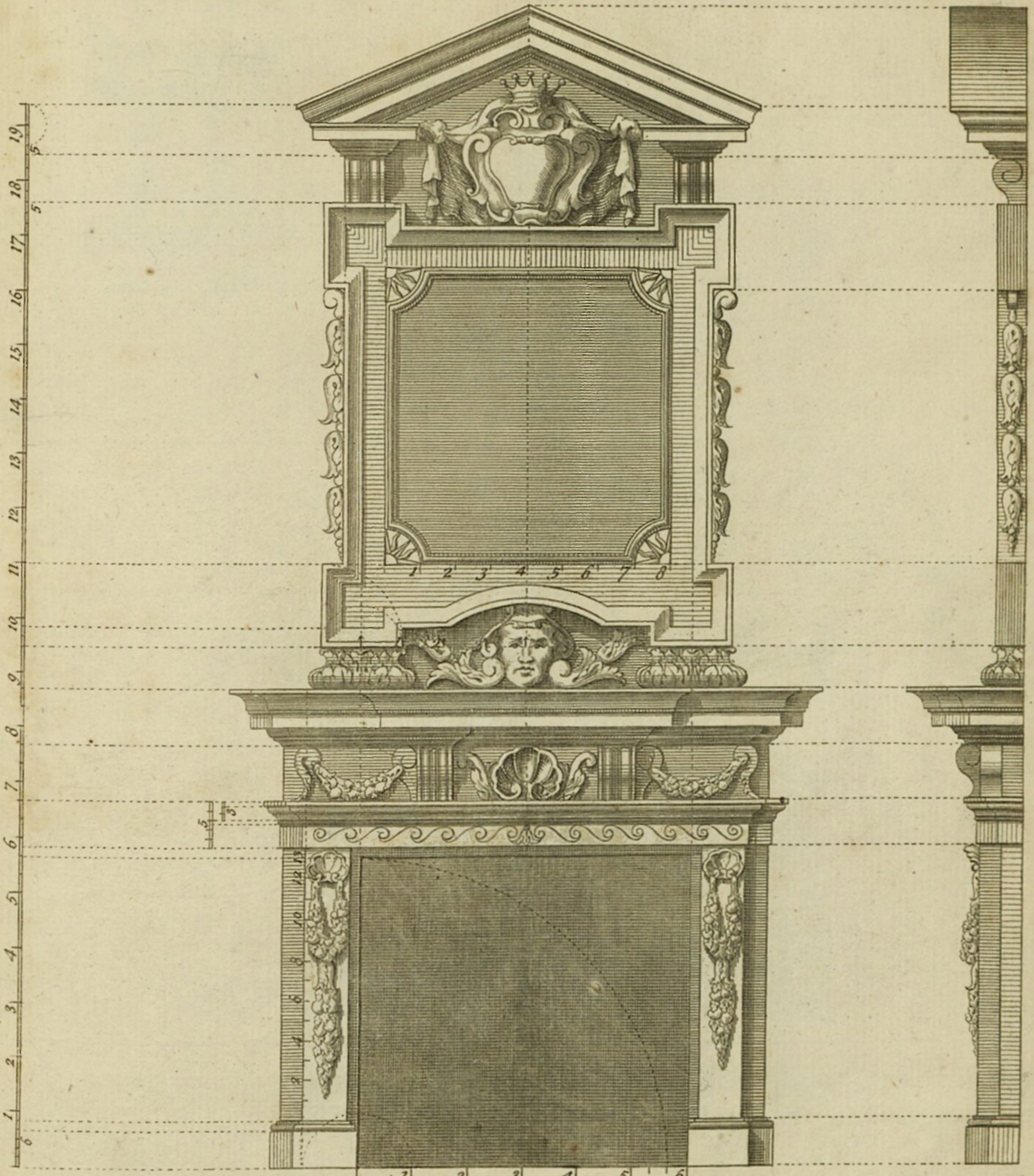
Thoˢ. Langley Delin. & Sculp.

Plate LXXXVI.



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
4
6
7
1
2
3
4
5
6

The Measures Invented Proportioned and affixed by Batty Langley 1739. *Thoˢ. Langley Sculp.*


19
5
18
5
17
16
15
14
13
12
11
10
9
8
7
5
3
6
5
4
3
2
1
0
1 2 3 4 5 6 7 8
1 2 3 4 5 6

Batty Langley Invent & Delin. 1739.

Thoˢ. Langley Sculp.

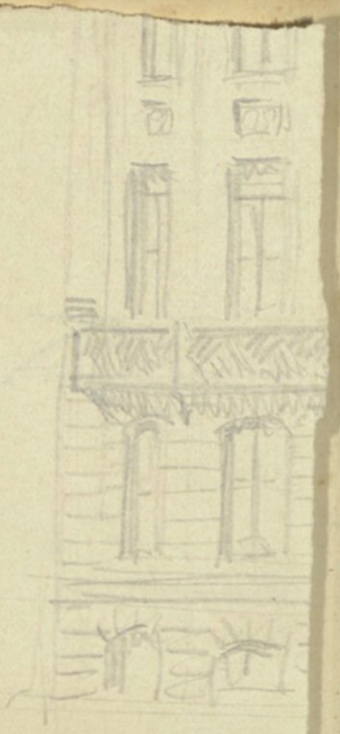
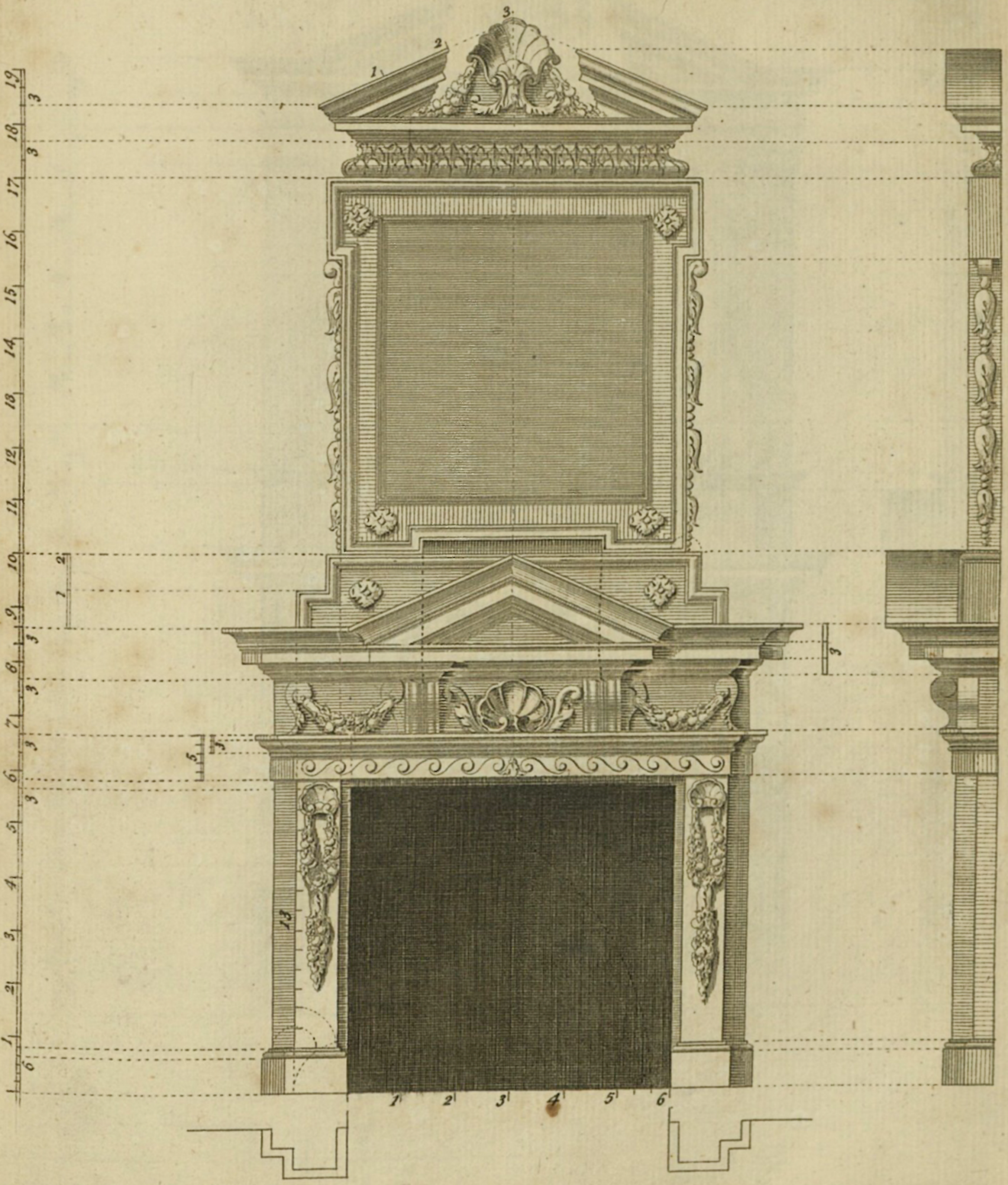
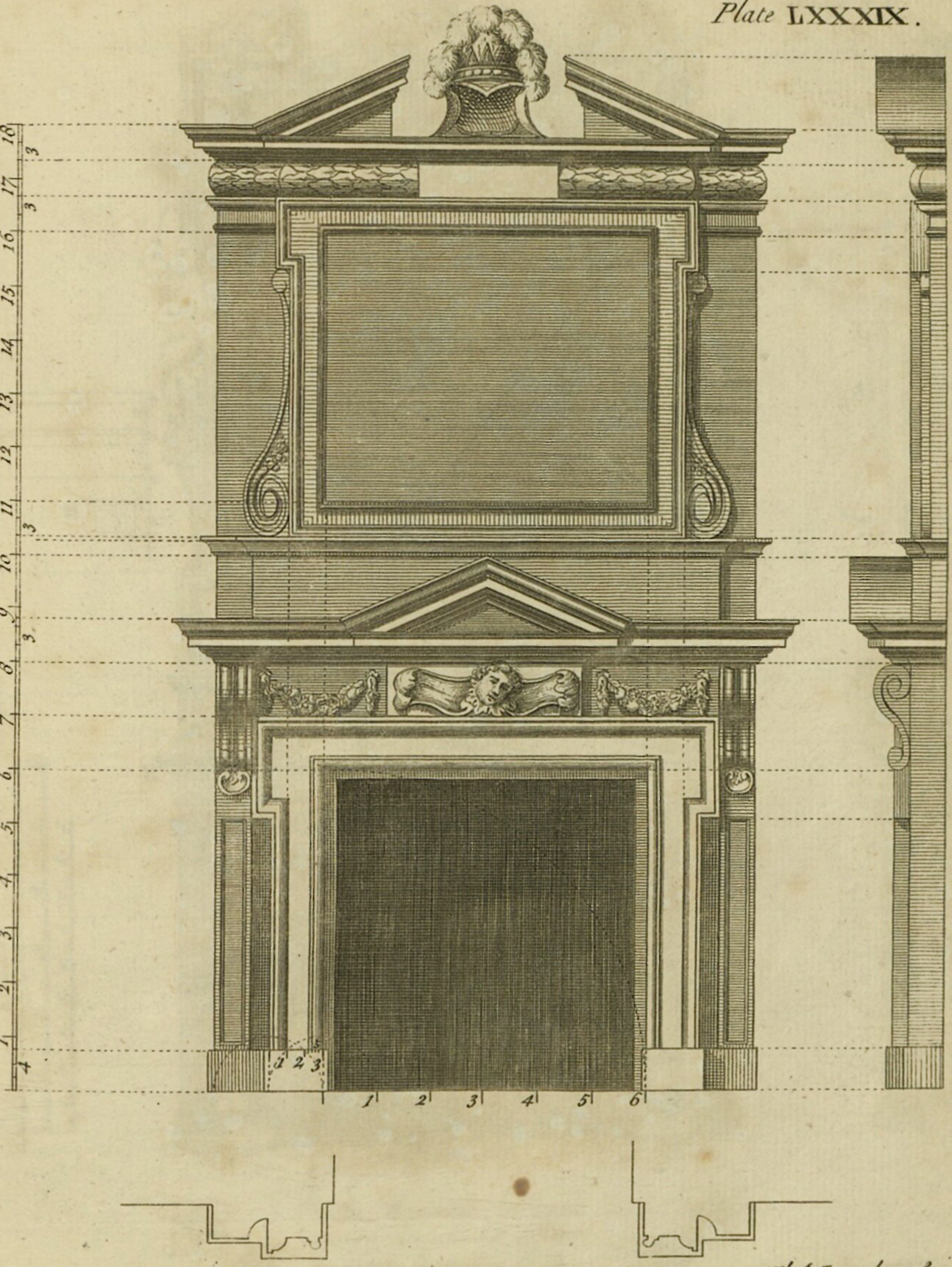


Plate LXXXVIII.


3
2
1
19
3
18
3
17
16
15
14
13
12
11
10
2
1
9
3
8
3
7
3
5
3
6
3
5
4
3
13
2
1
6
1
2
3
4
5
6

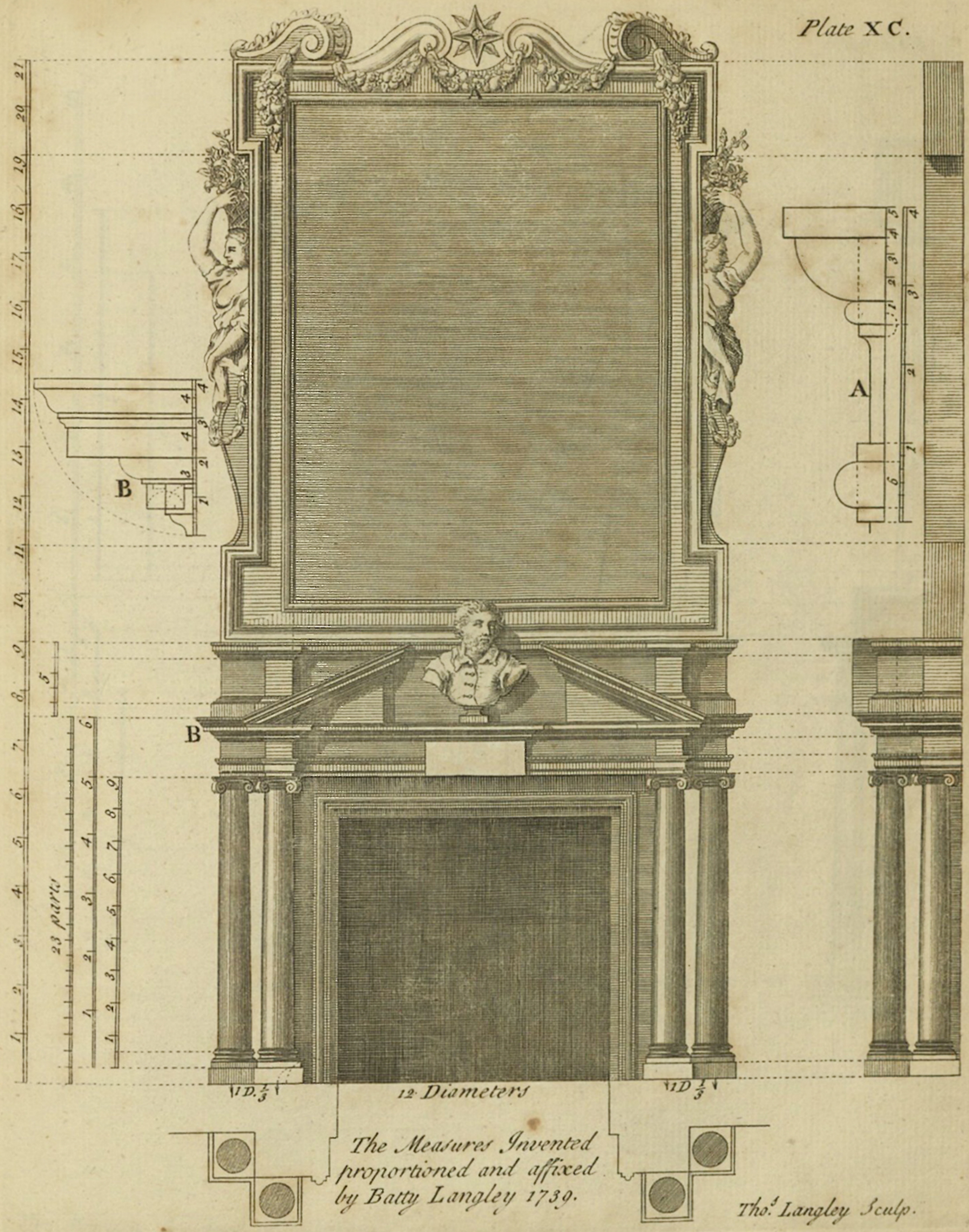
The Measures Invented proportioned and affixed by Batty Langley 1739. *Thos. Langley Sculp.*

Plate LXXXIX.


18
3
17
3
16
15
14
13
12
11
3
10
9
3
8
7
6
5
4
3
2
1
4
1 2 3
1
2
3
4
5
6

The Measures Invented proportioned and affixed by Batty Langley 1739. *Thoˢ. Langley Sculp.*

Plate XC.

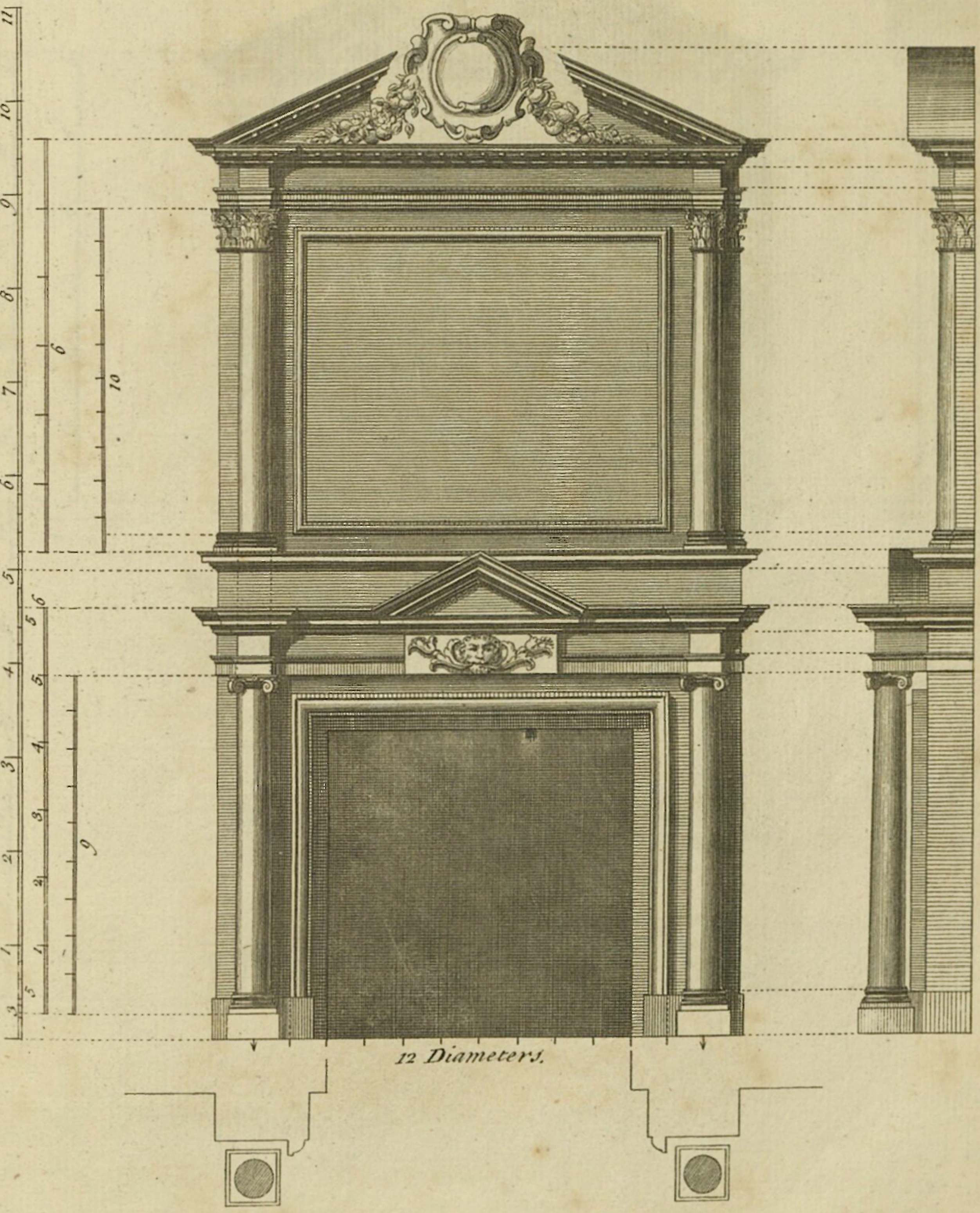


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
23 parts
A
B
B
A
12 Diameters
1 D. 1/3
1 D 1/3

The Measures Invented
proportioned and affixed
by Batty Langley 1739.

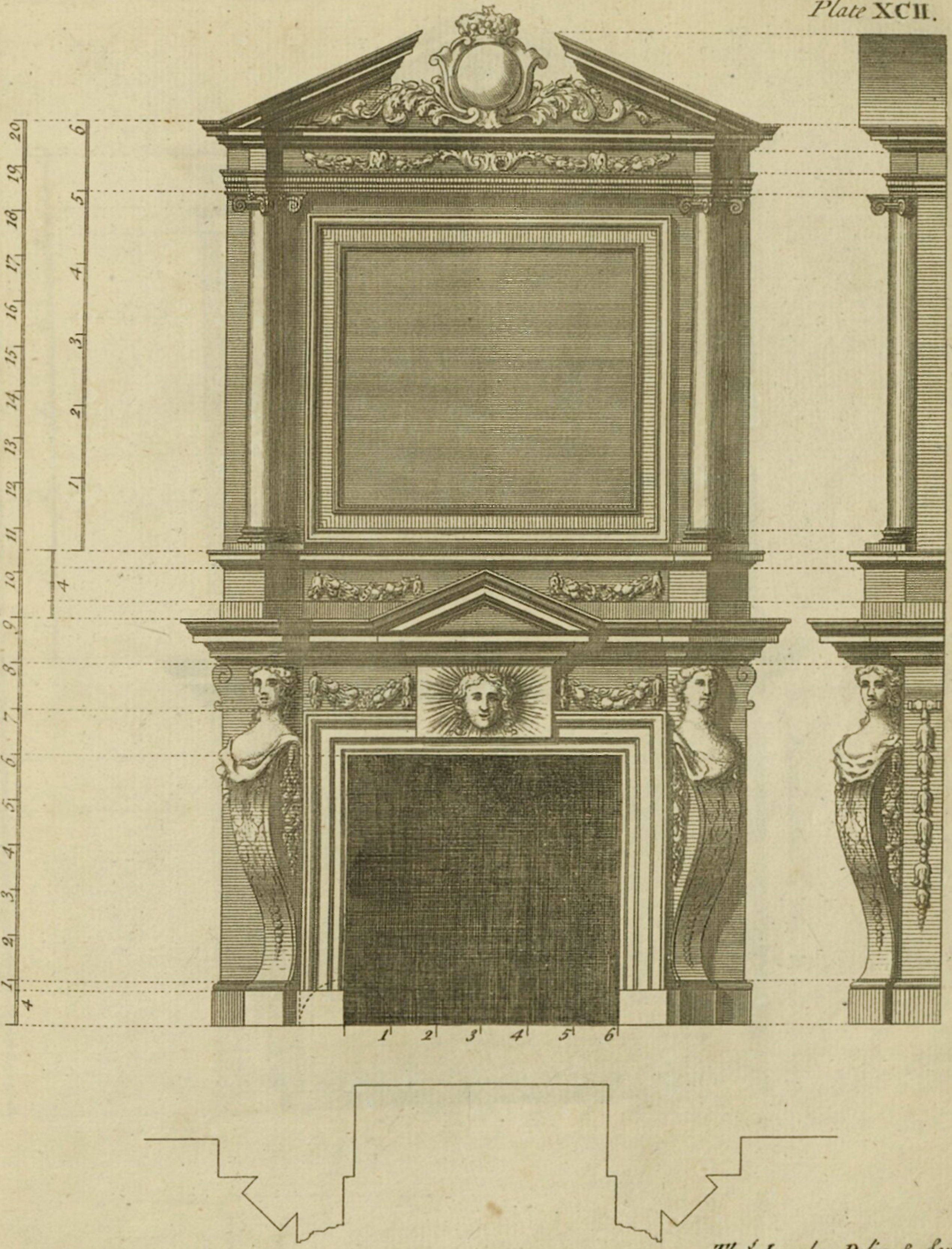
Thoˢ Langley Sculp.

Plate XCI.


11
10
9
8
7
6
5
4
3
2
1
9
10
6
5
4
3
2
1
5
9
12 Diameters.

The Measures Invented proportioned and affixed by Batty Langley 1739. *Thoˢ. Langley Sculp.*

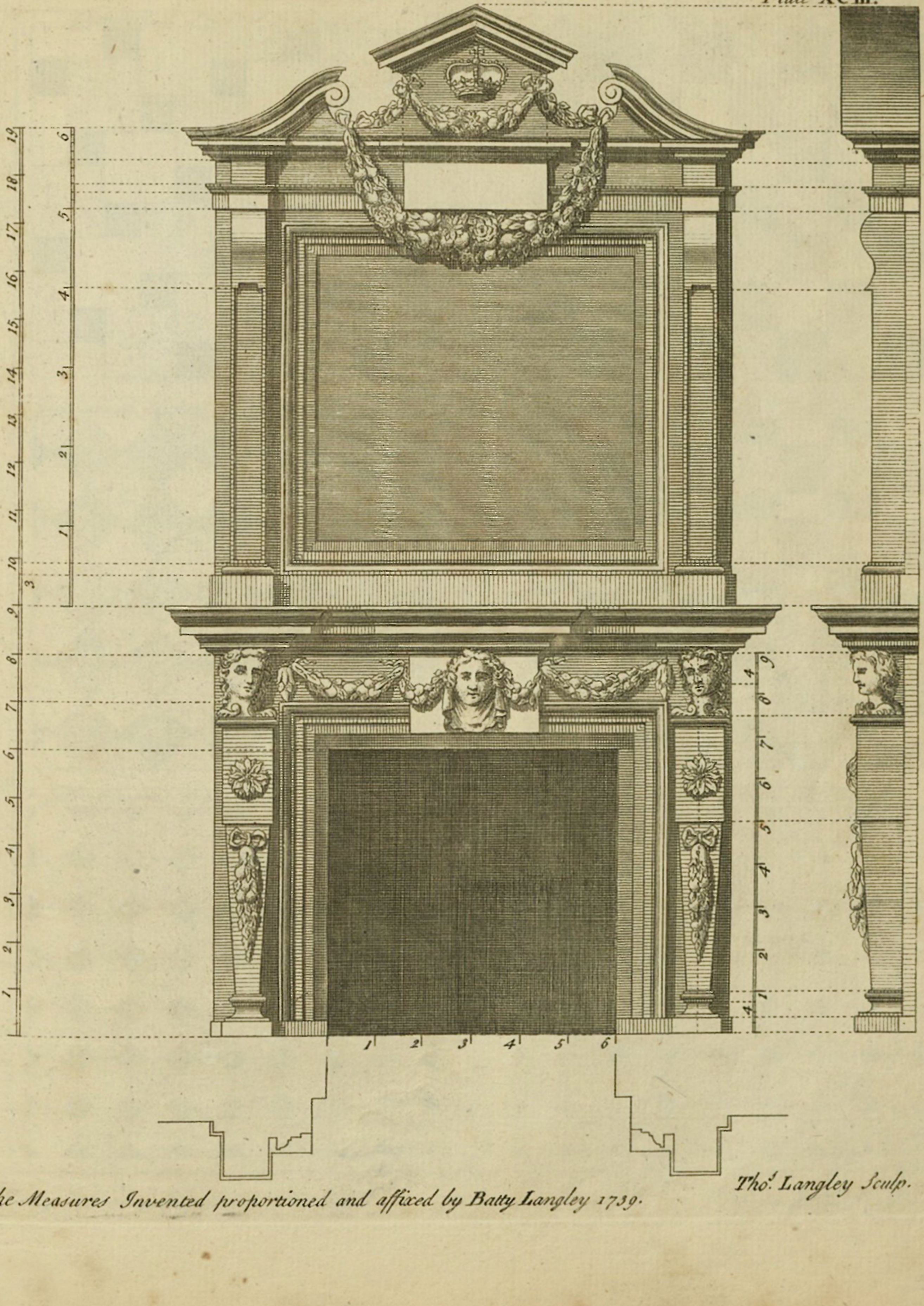
Plate XCII.


4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
4
1
2
3
4
5
6
1
2
3
4
5
6

Thoˢ. Langley Delin. & Sculp.

The Measures Invented proportioned and affixed by Batty Langley 1739.

Plate XCIII.


1
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12
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14
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16
17
18
19
1
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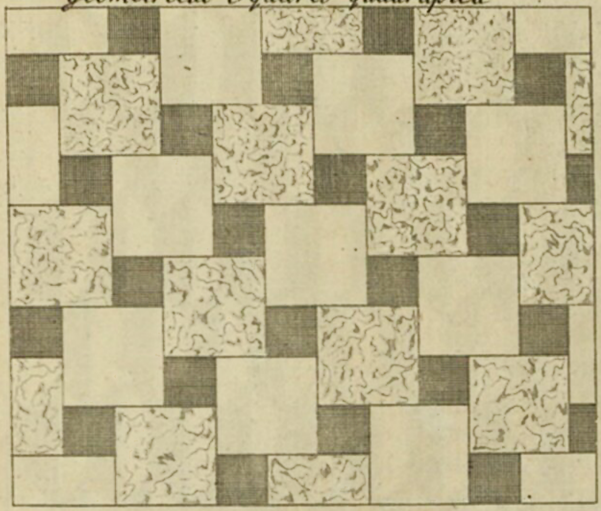
3
4
5
6
3
1
2
3
4
5
6
1
2
3
4
5
6
7
8
9
4
4

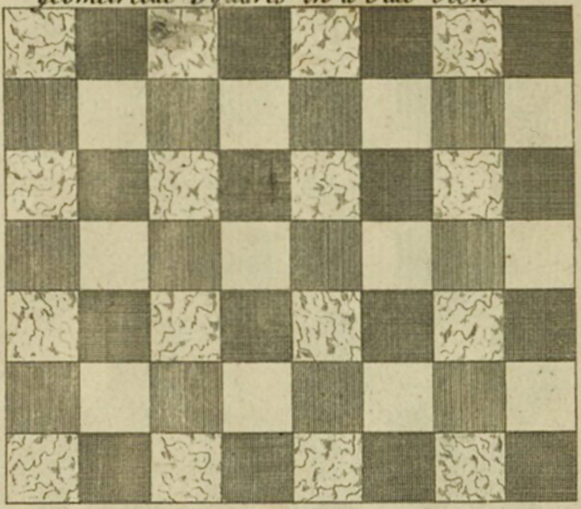
The Measures Invented proportioned and affixed by Batty Langley 1739.

Thos. Langley Sculp.

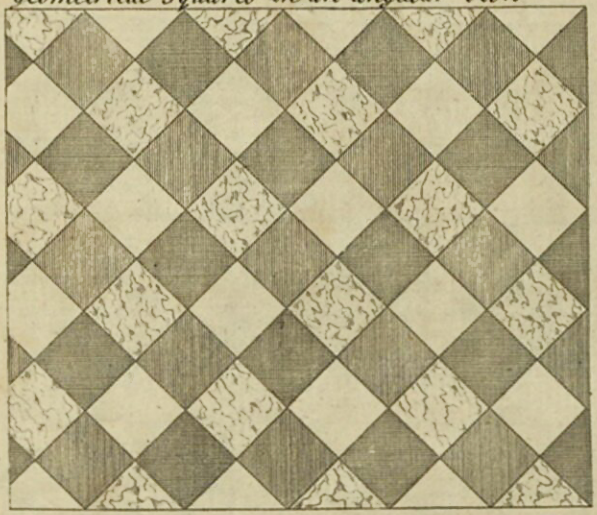
Decorations for Pavements &c. Plate XCIV.



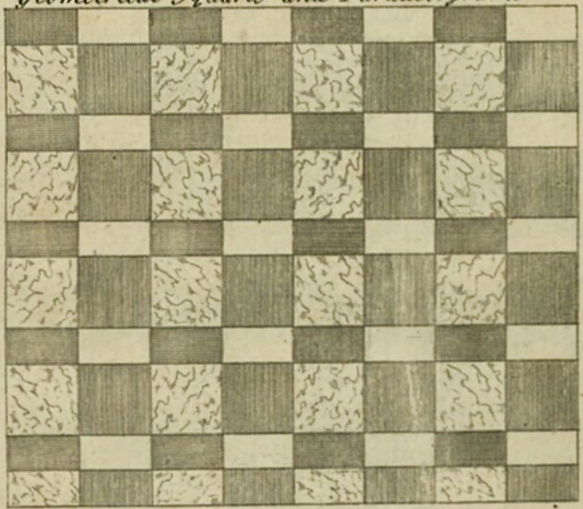
Geometrical Squares quadrupled



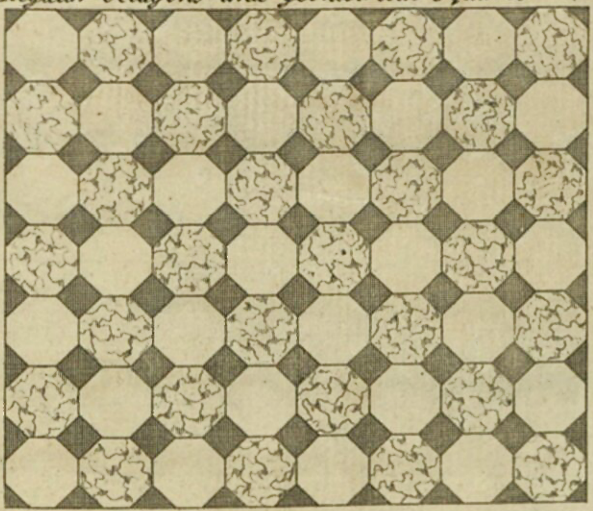
Geometrical Squares in a Side view



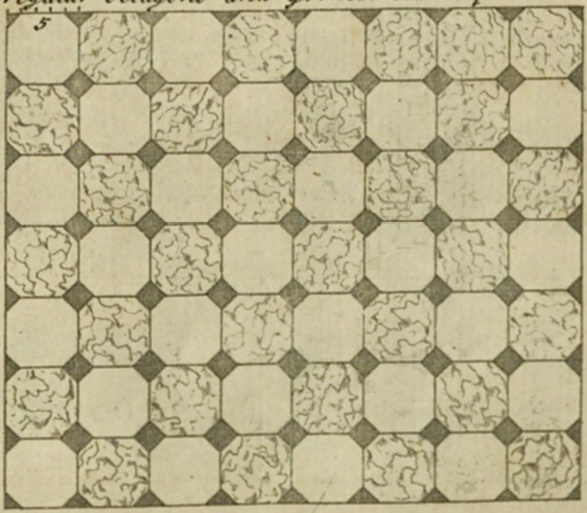
Geometrical Squares in an angular view



Geometrical Squares and Parallelograms



Regular Octagons and Geometrical Squares

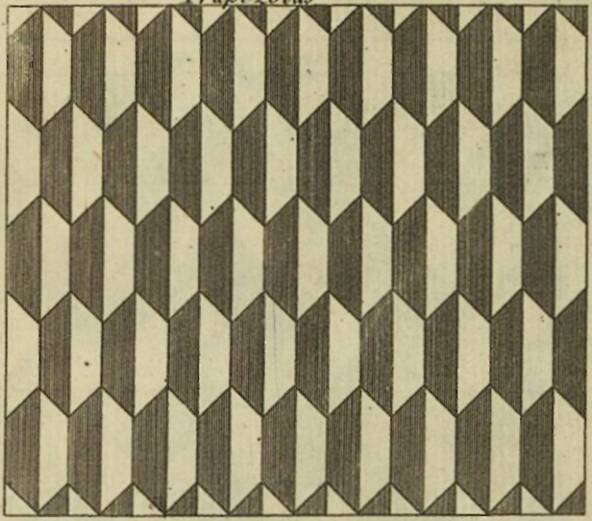


Irregular Octagons and Geometrical Squares

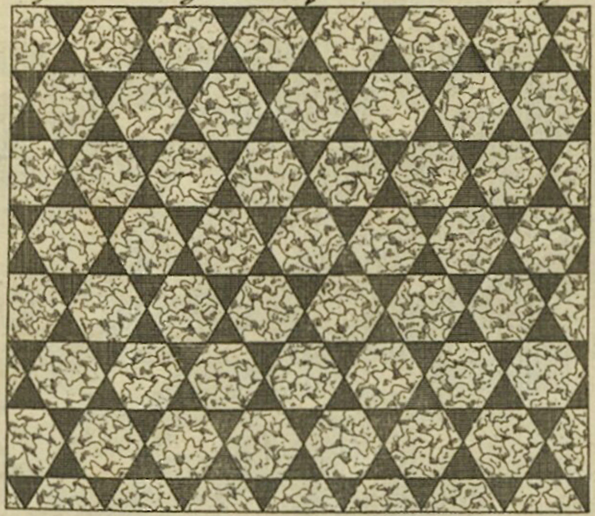
Batty Langley Invent and Delin. 1739. Thos. Langley Sculp.

Decorationſ for Cabinet workſ, Flooring. &c. Plate XCV.

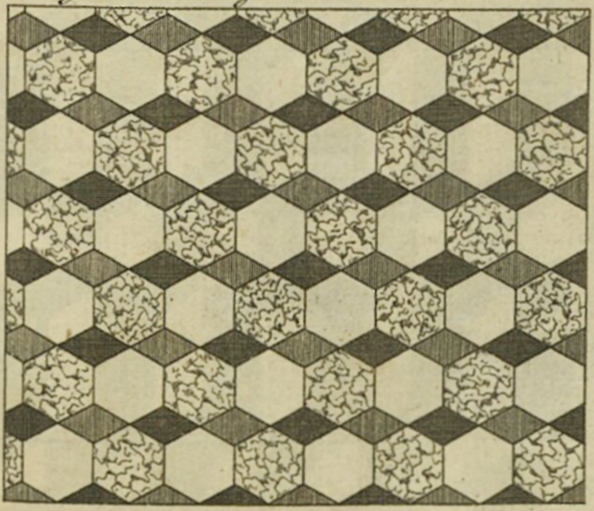
Trapezoidſ



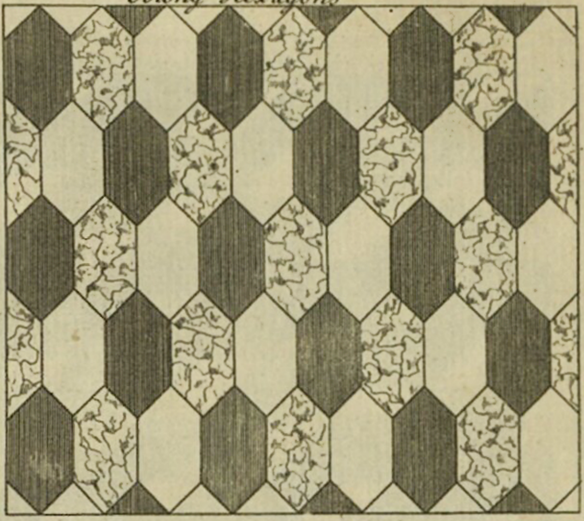
Regular Hexagonſ & equilateral Triangleſ



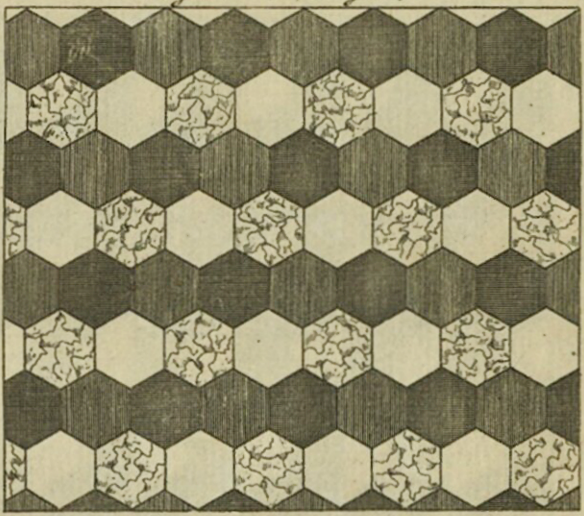
Regular Hexagonſ, and Rhombuſs



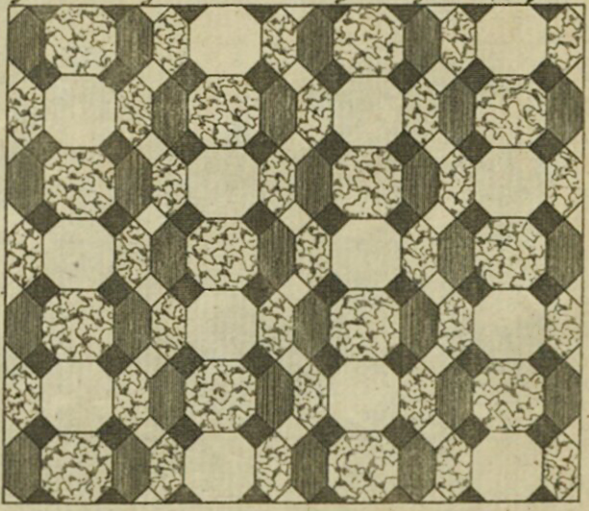
oblong Hexagonſ



Regular Hexagonſ



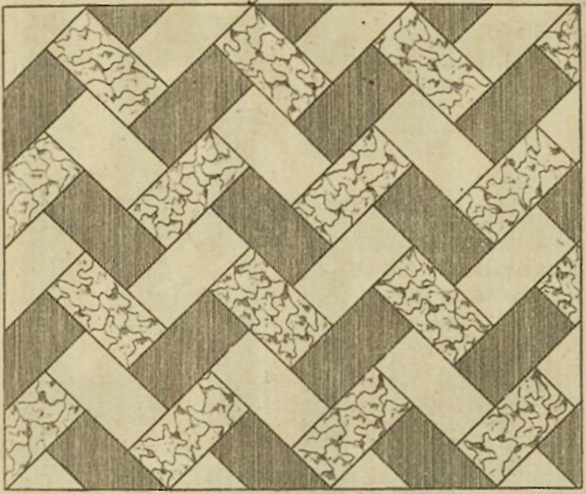
Irregular Octagonſ, with oblong Hexagonſ & Squareſ



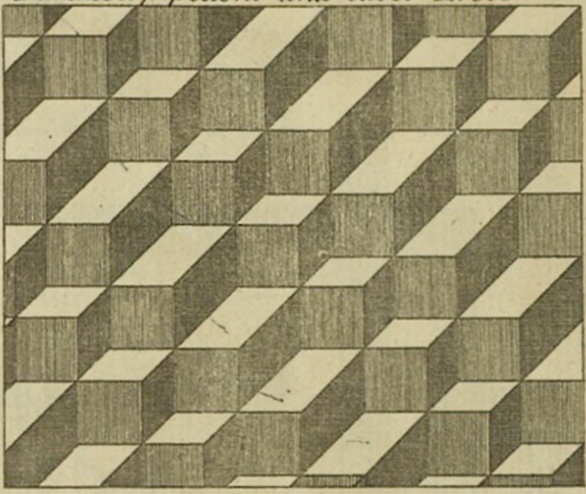
Batty Langley Invent and Delin. 1739. Thos. Langley Sculp.

Decorations for Cabinet-works, Floors &c. Plate XCVI.

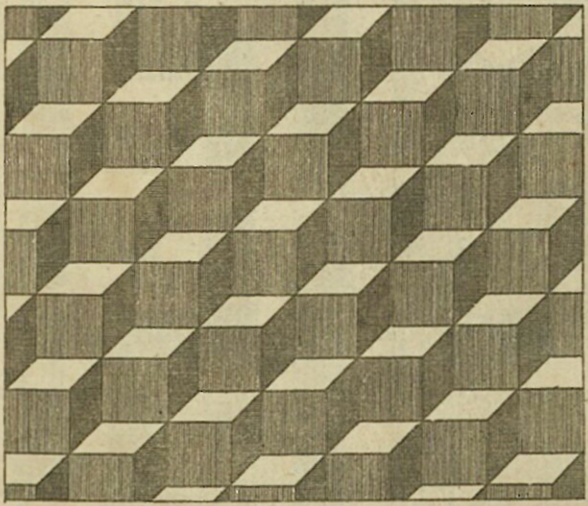
Herring Bone



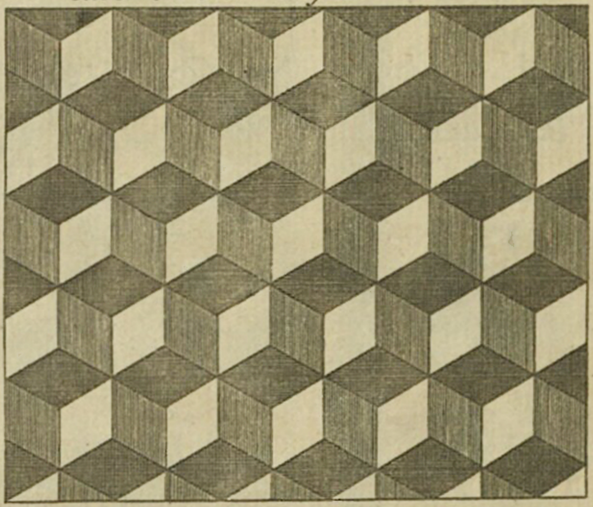
Parallelopipedons and Cubes Erect.



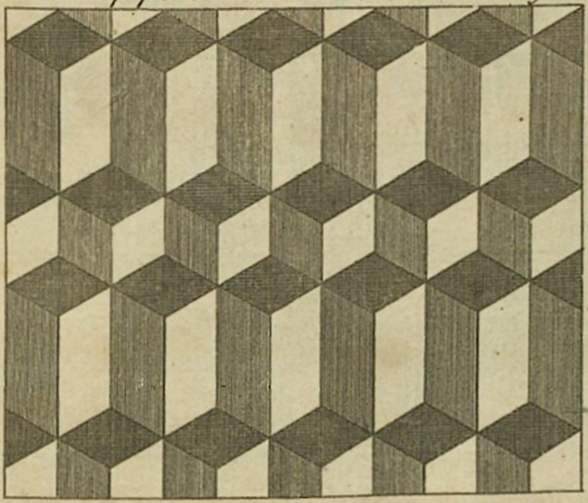
Cubes Erect.



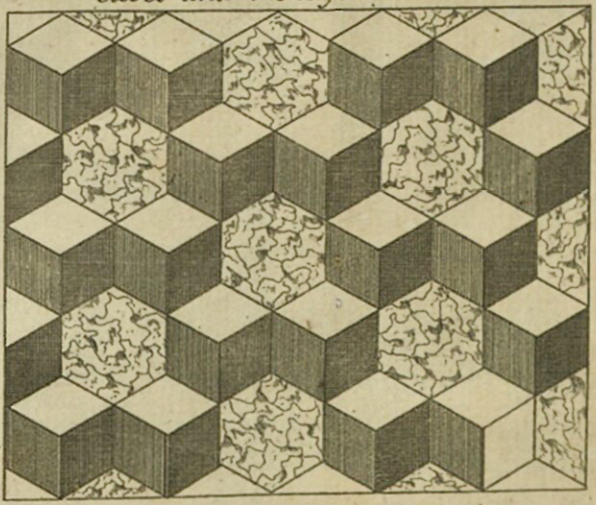
Cubes on their angles.



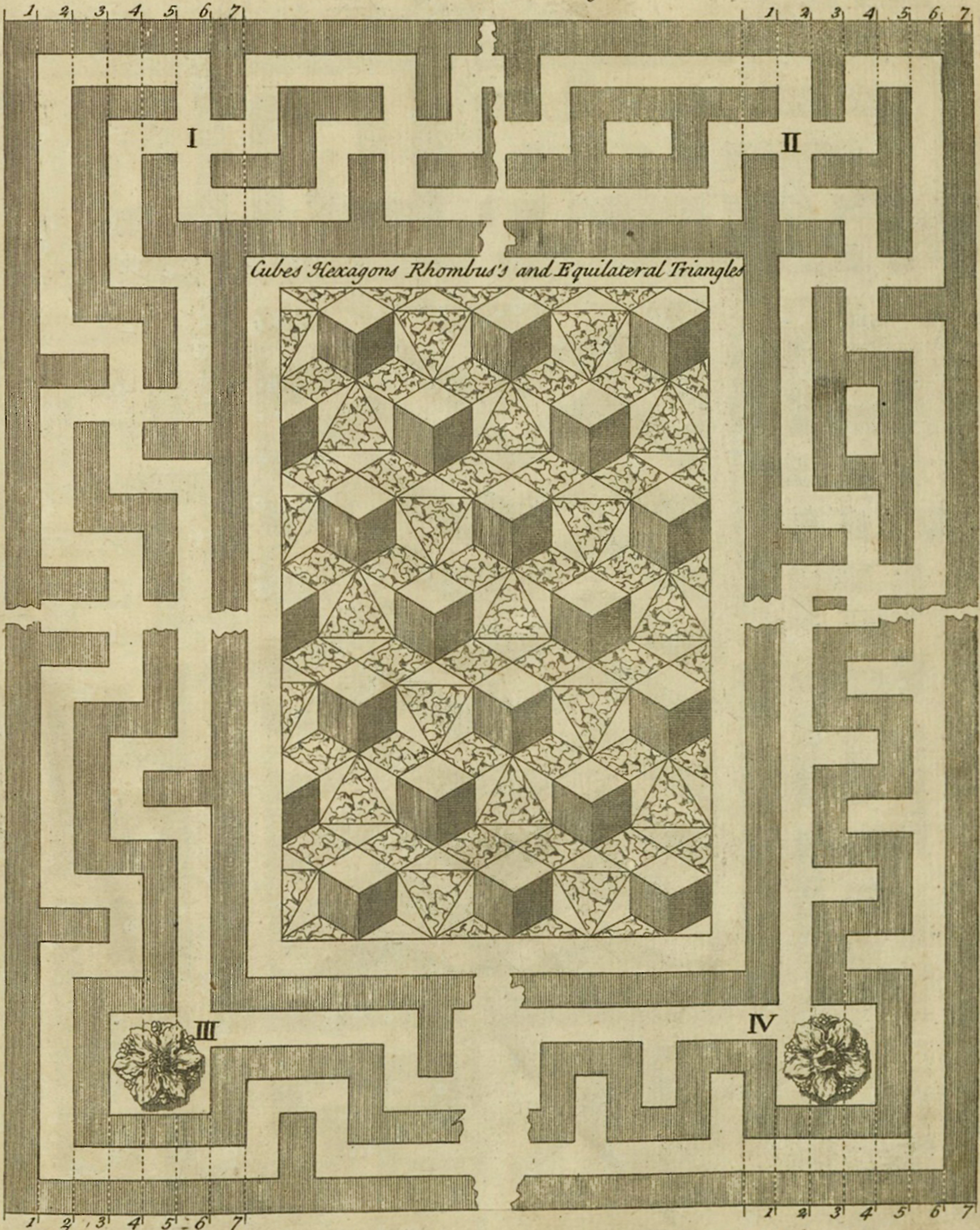
Parallelopipedons and Cubes on their angles.



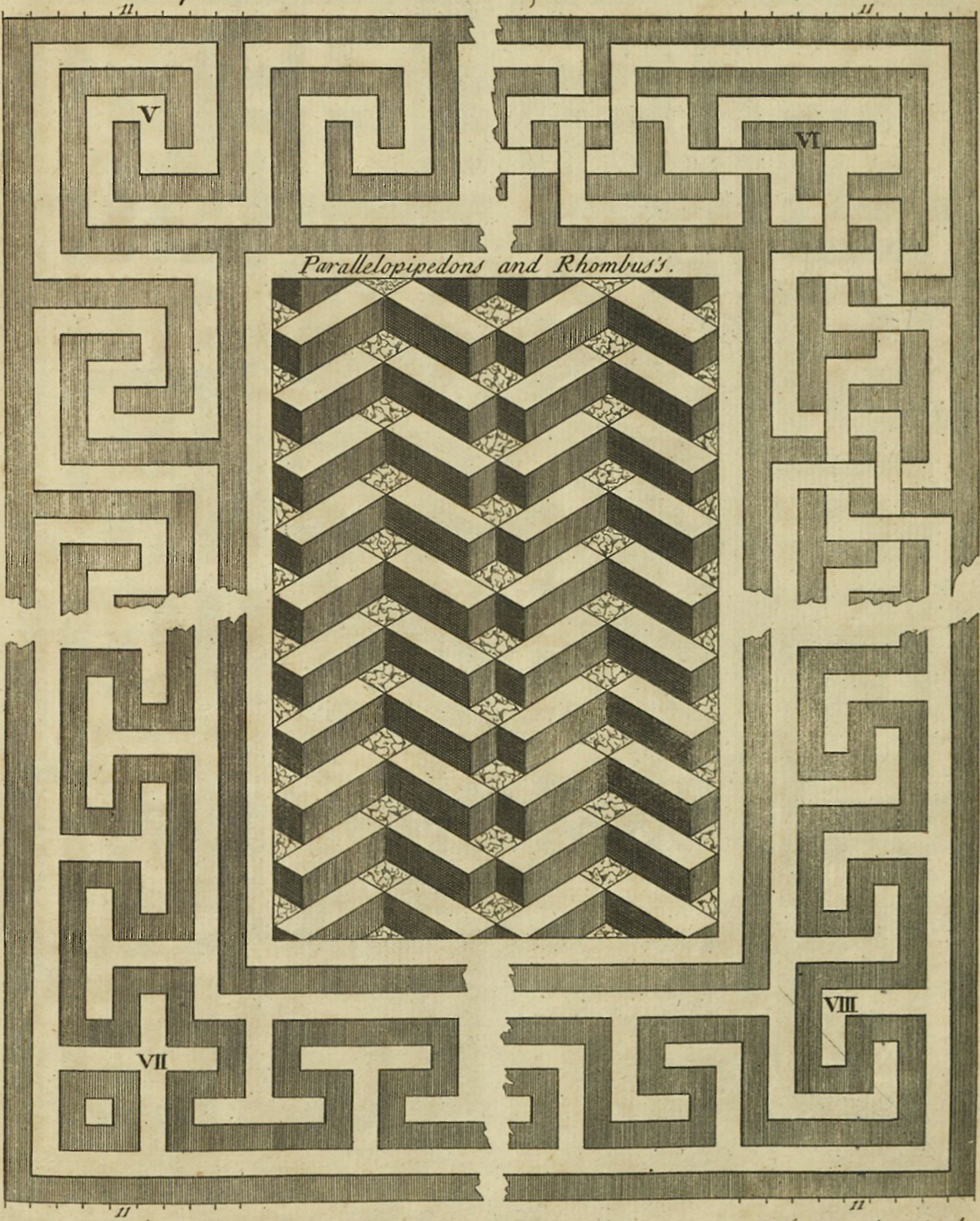
Cubes and Hexagons.



Batty Langley Invent and Delin. 1739. *Thoˢ. Langley Sculp.*

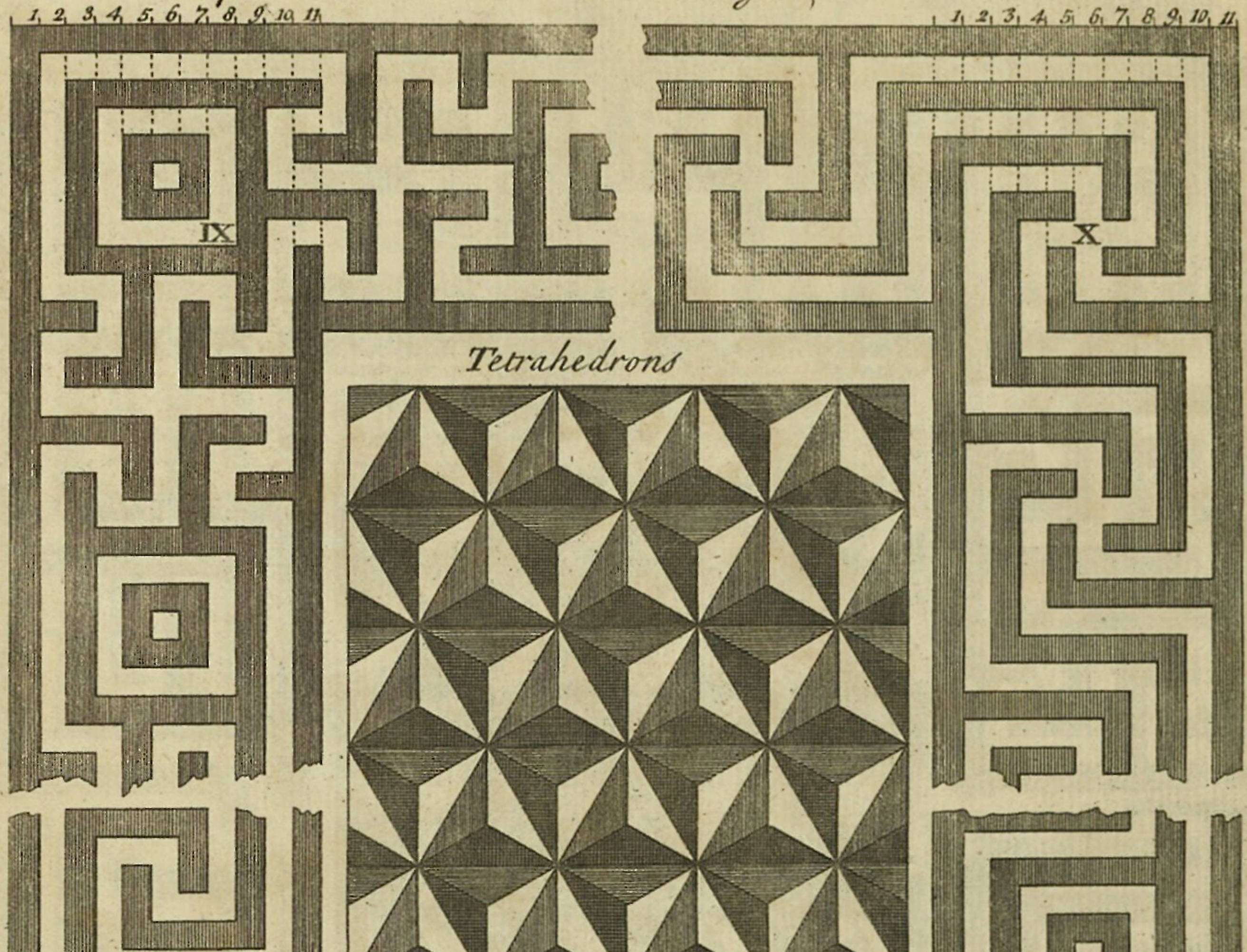

1 2 3 4 5 6 7
1 2 3 4 5 6 7
I
II
Cubes Hexagons Rhombus's and Equilateral Triangles
III
IV
1 2 3 4 5 6 7
1 2 3 4 5 6 7

Batty Langley Invent and Delin. 1739. *Tho. Langley Sculp.*

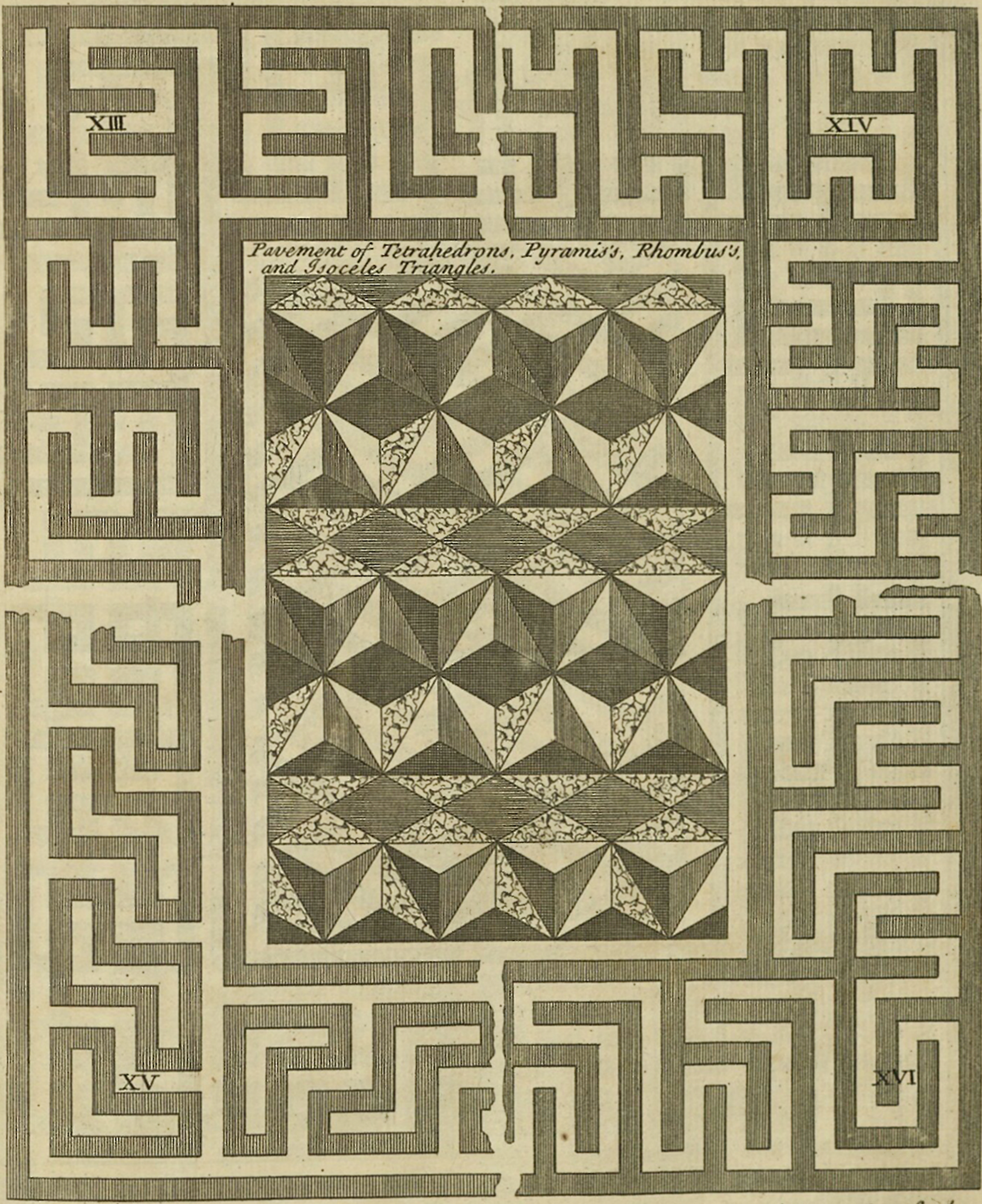

11
11
V
VI
Parallelopipedons and Rhombus's.
VII
VIII
11
11

Batty Langley Invent and Delin. 1739. Thō. Langley Sculp.

Decorations for Cabinet works, Floors, Ciellings. &c. Plate XCIX.

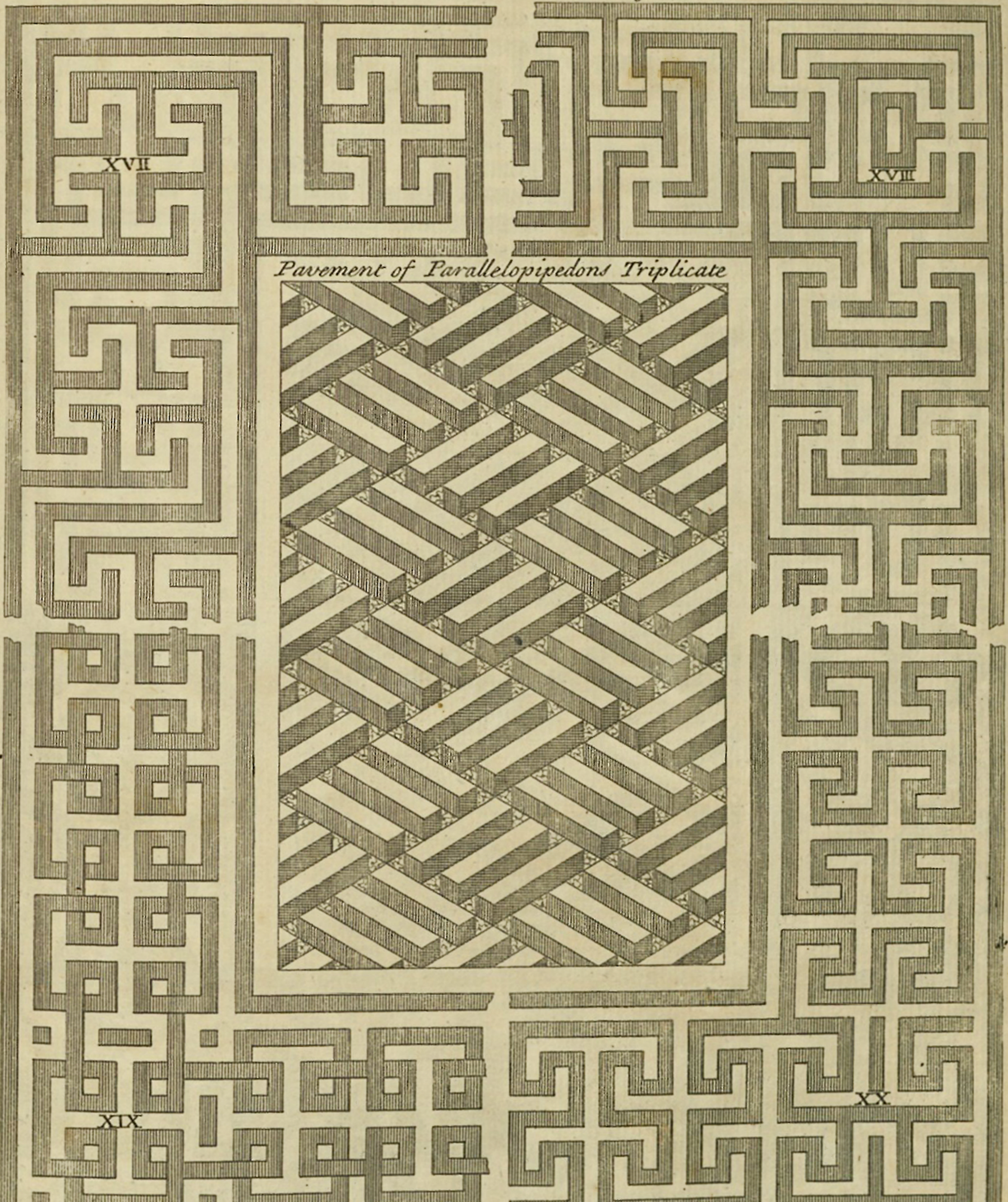

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
IX
X
Tetrahedrons
XI
XII
11
11

Batty Langley Invent and Delin. 1739. *Thos. Langley Sculp.*


XIII
XIV
Pavement of Tetrahedrons, Pyramis's, Rhombus's, and Isoceles Triangles.
XV
XVI

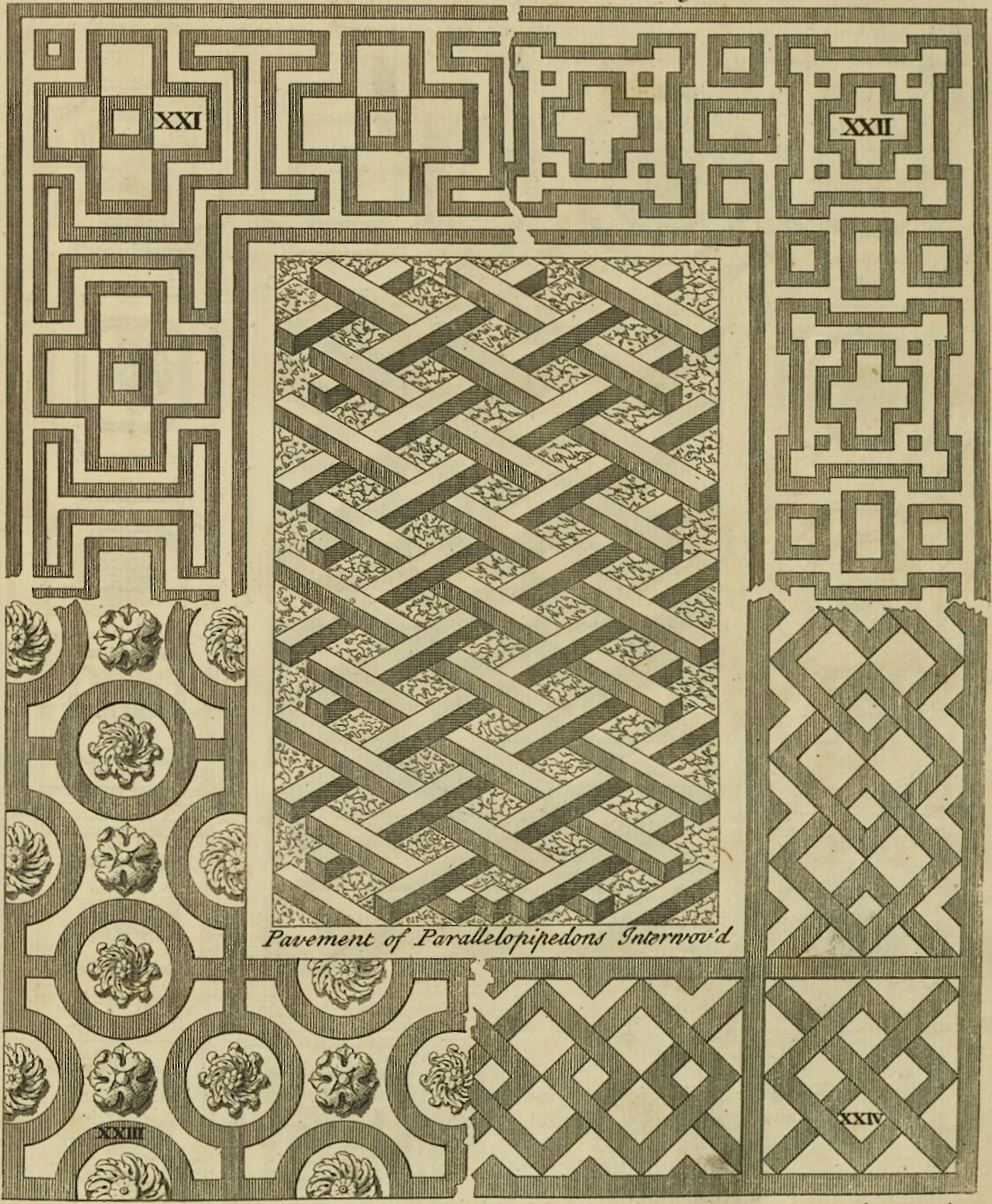
Batty Langley Invent and Delin. 1739. *Thos. Langley Sculp.*

Decorations for Cabinet-works, Floors, Cielbings &c. *Plate* CI.


XVII
XVIII
Pavement of Parallelopipedons Triplicate
XIX
XX

Batty Langley Invent and Delin. 1739. *Thos. Langley Sculp.*

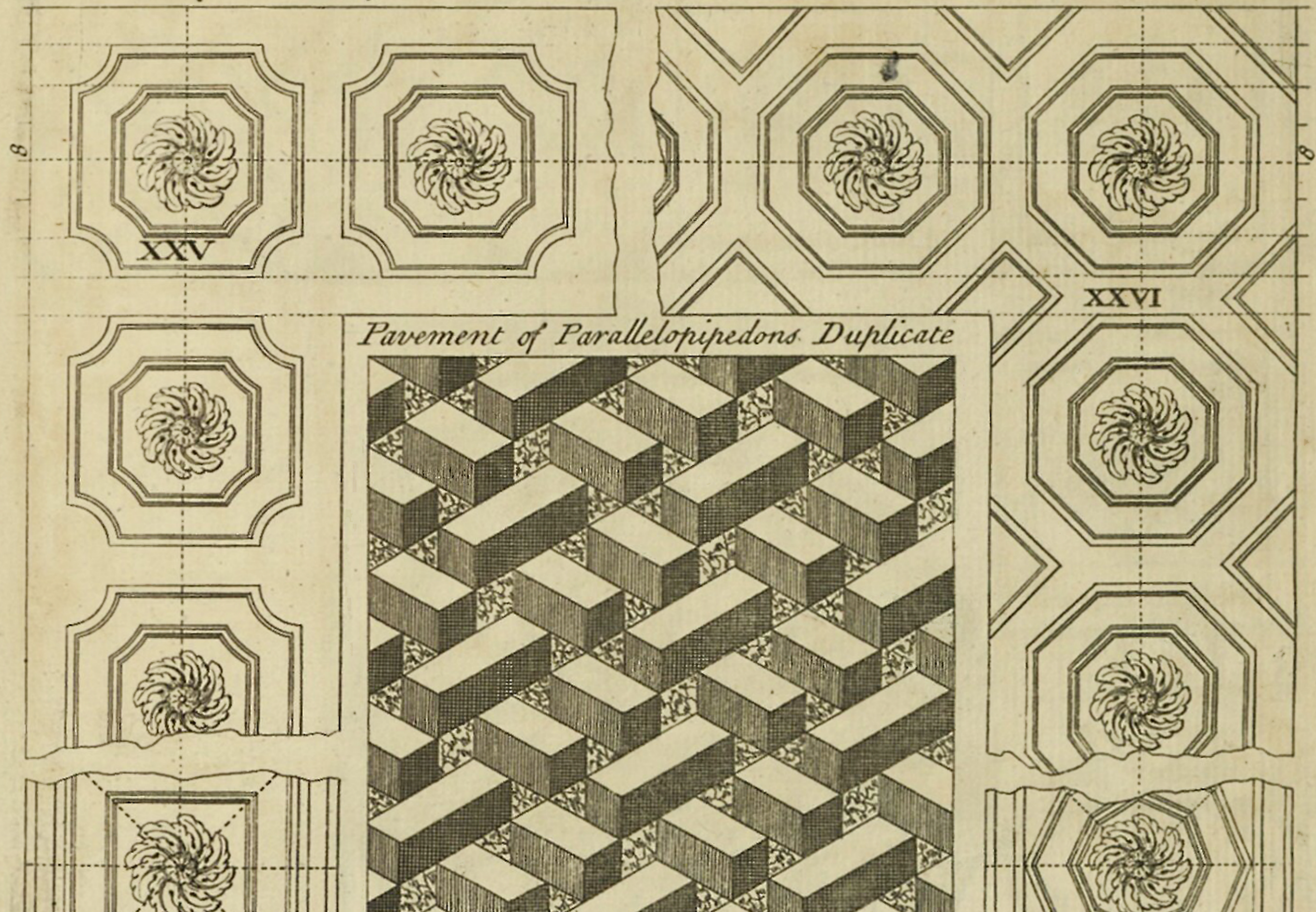
Enrichments for Planceers, Cabinet-works, Borders to Ciellings, Floors &c. Plate CII.


XXI
XXII
Pavement of Parallelopipedons Interwov'd
XXIII
XXIV

Batty Langley Invent and Delin. 1739.

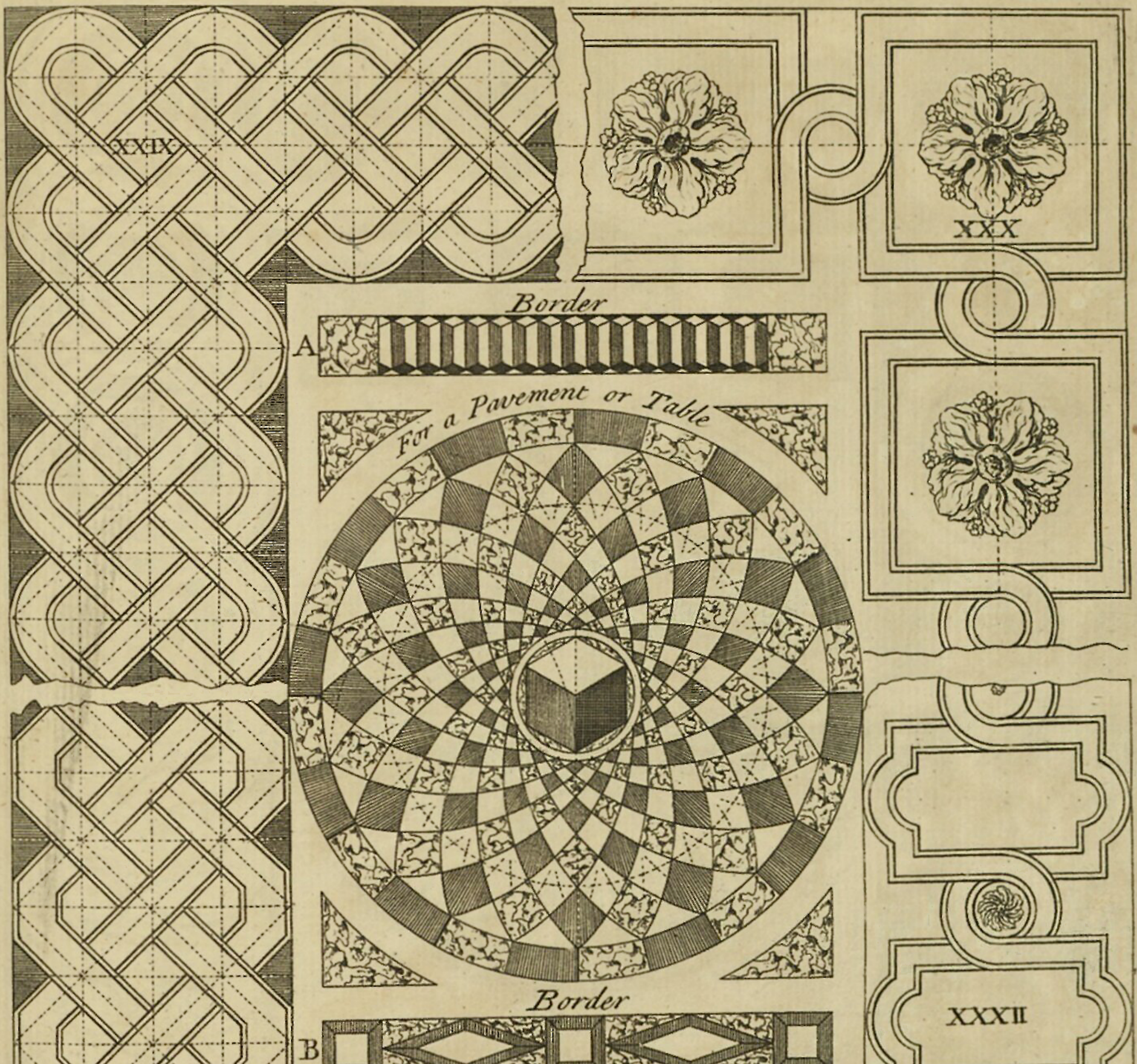
Thos. Langley Sculp.

Borders for Ciellings, Cabinet-works &c. Plate CIII.


XXV
XXVI
Pavement of Parallelopipedons Duplicate
XXVII
XXVIII
8
8
8
1
2
3
4
5
6
7
8

Batty Langley Invent and Delin. 1739. *Thos. Langley Sculp.*

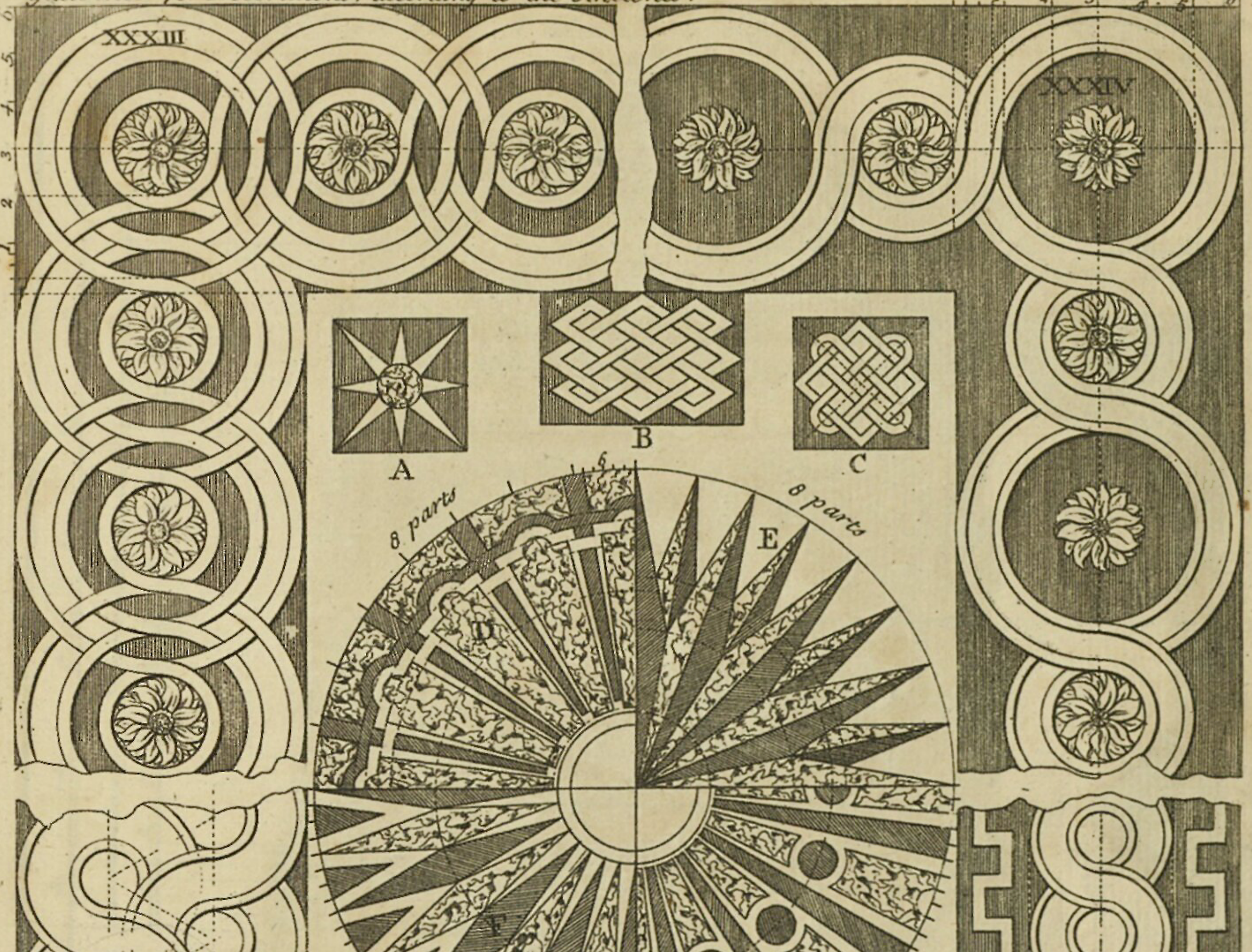
Guilochi's *for decorating, Looking Glaſs and Picture Frames &c.* Plate CIV.


XXIX
XXX
Border
A
For a Pavement or Table
Border
B
XXXII
XXXI

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

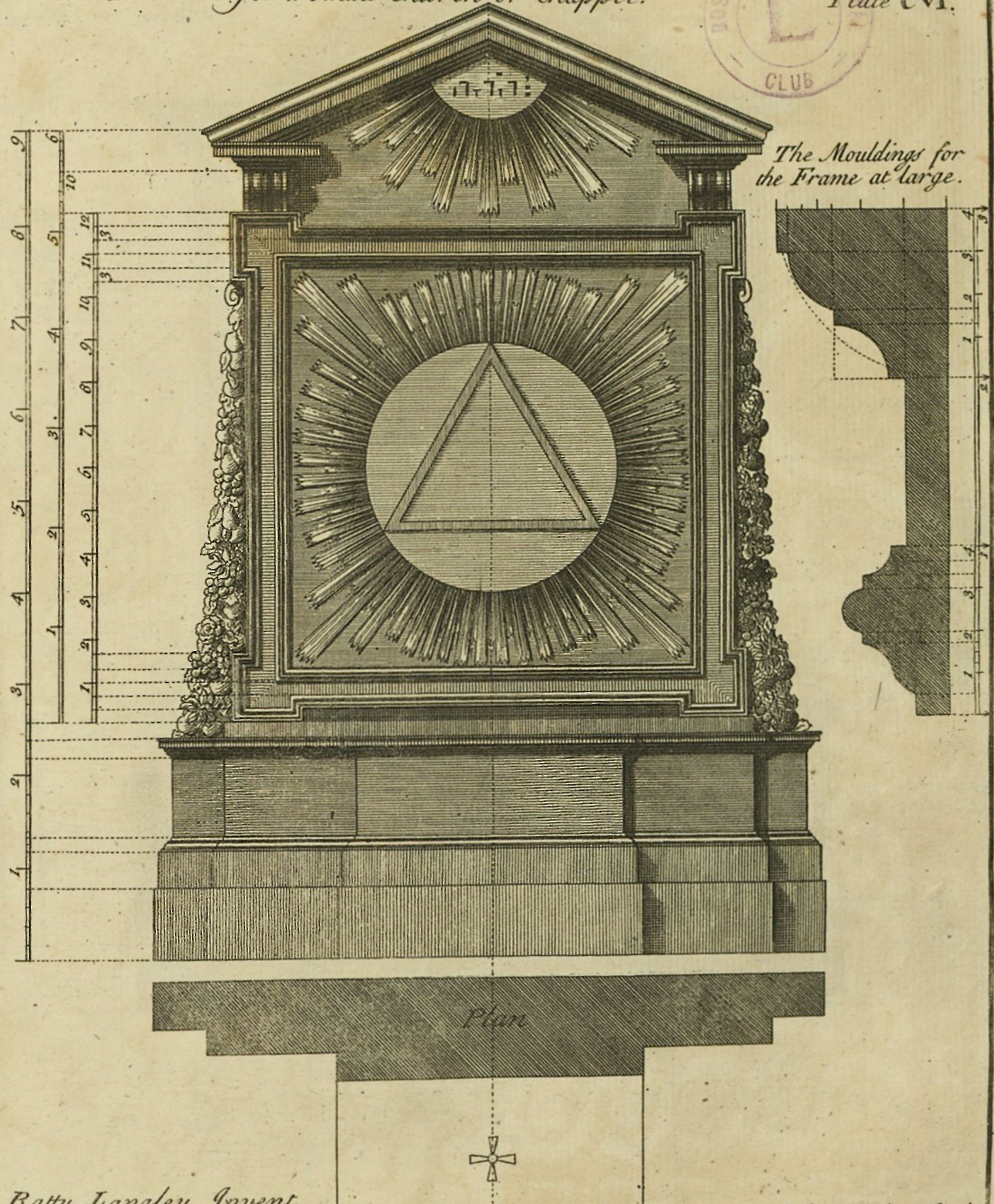
Guilochi's for Decorations, according to the Ancients. *Plate CV.*


XXXIII
XXXIV
A
B
C
D
E
F
8 parts
8 parts
32 parts
32
6
H
I
XXXV
XXXVI
1
2
3
4
5
6

Batty Langley Invent and Delin. 1739. *Thoˢ. Langley Sculp.*

An **Altar Piece** *for a small Church or Chappel.* *Plate* **CVI.**

BOSTON ARCHITECTURAL CLUB
L

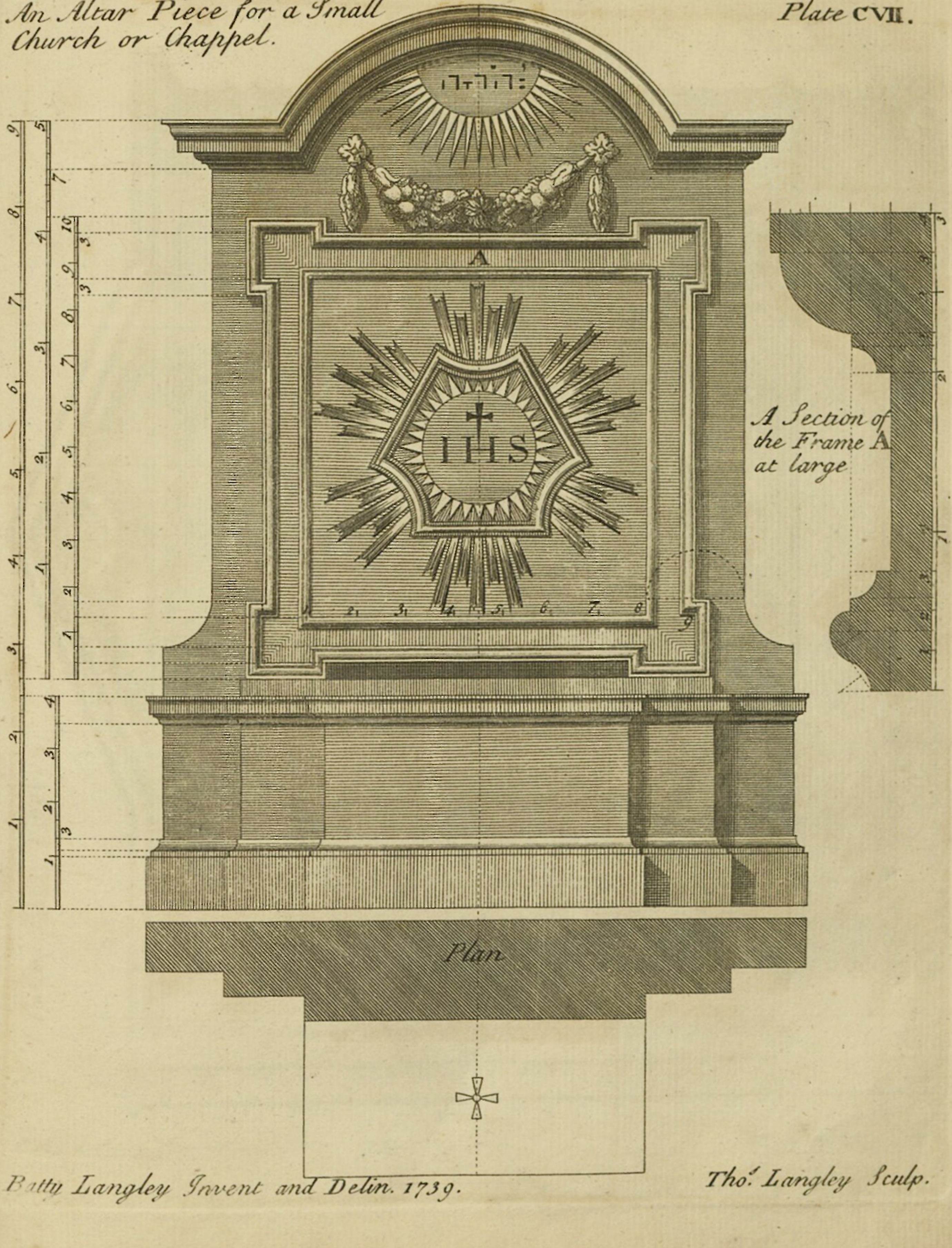

The Mouldings for the Frame at large.
Plan

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

An Altar Piece for a Small Church or Chappel.

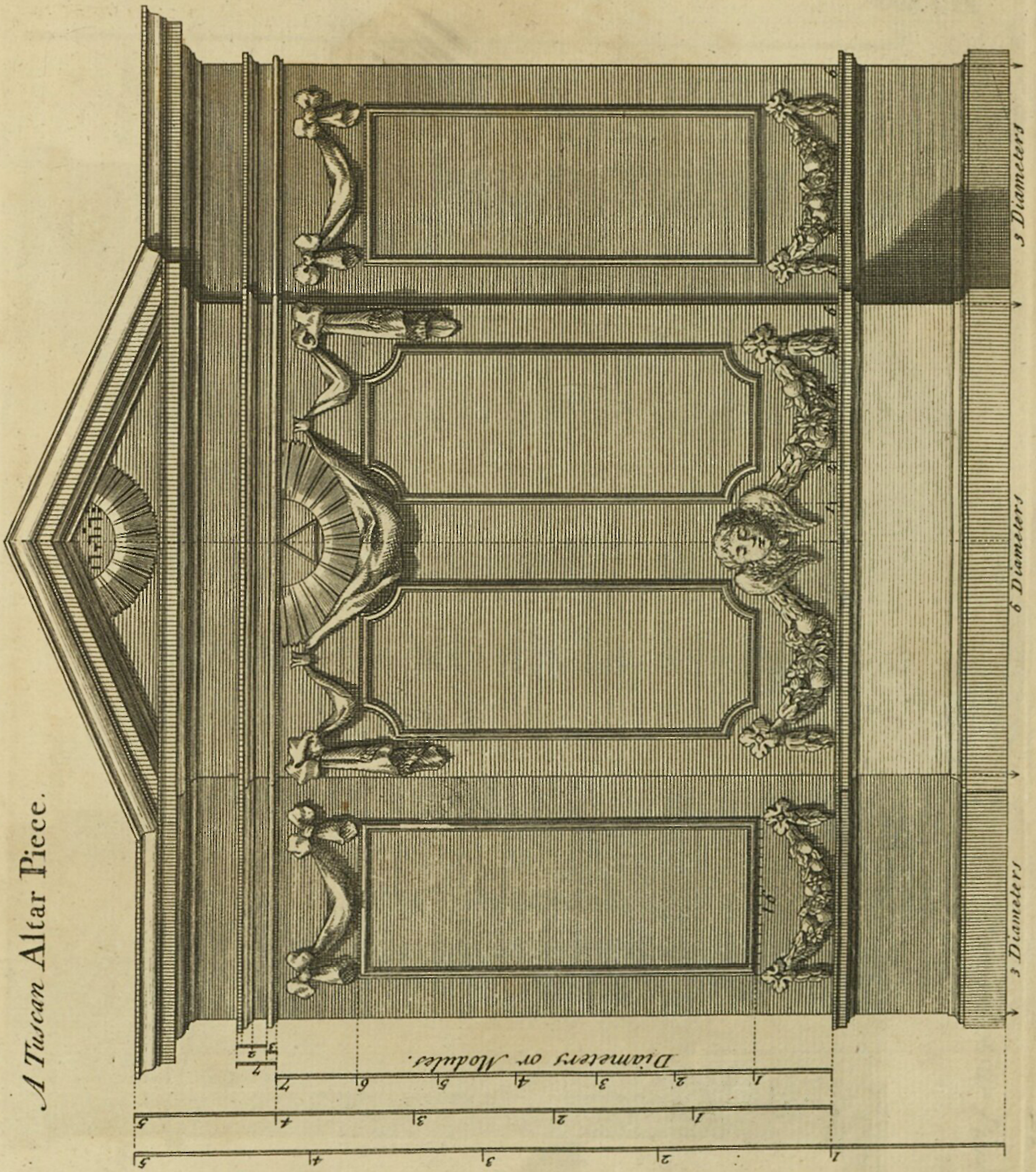
Plate CVII.


יהוה
A
IHS
1 2 3 4 5 6 7 8 9
A Section of the Frame A at large
Plan

Batty Langley Invent and Delin. 1739.

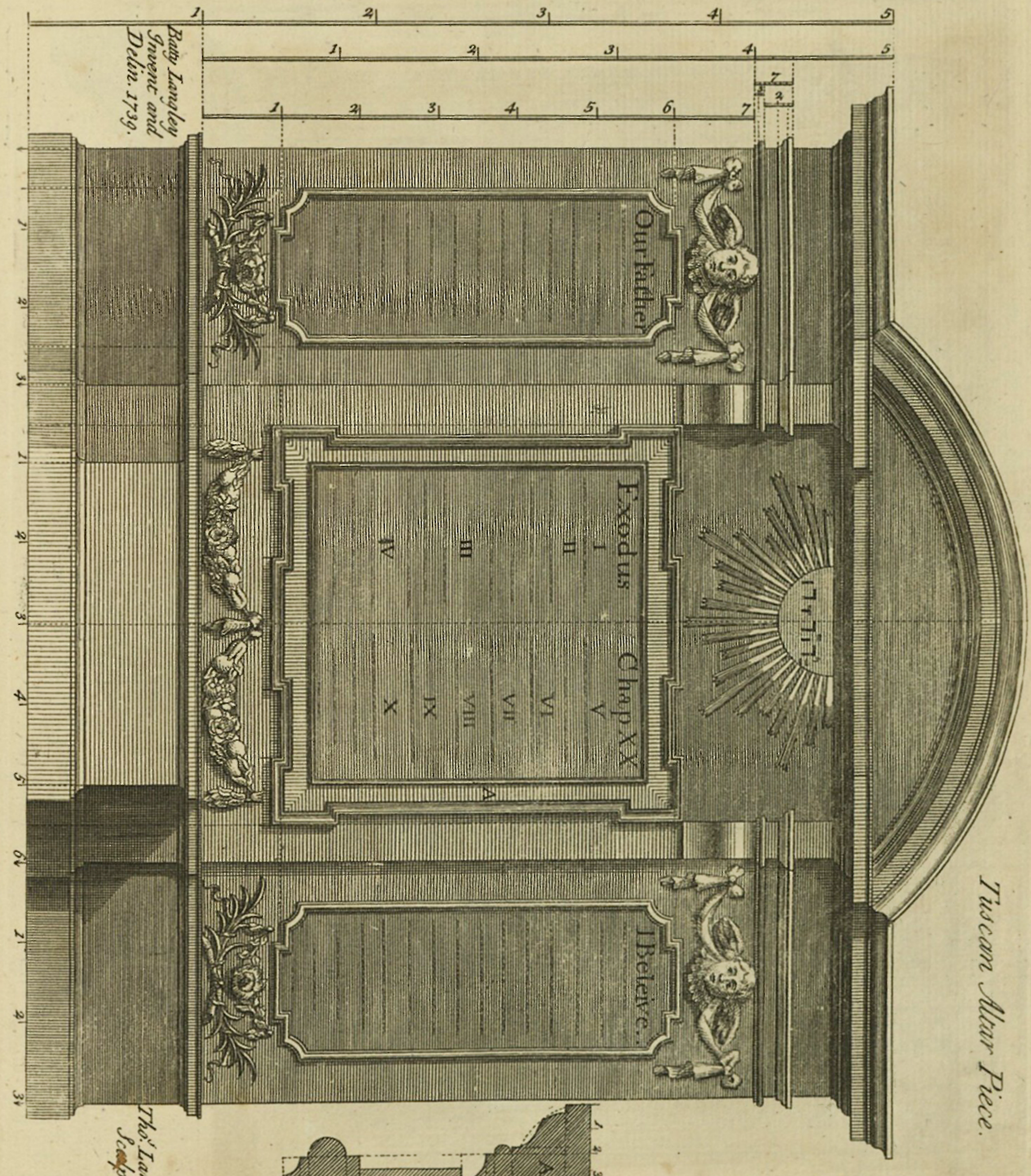
Thoˢ. Langley Sculp.

A Tuscan Altar Piece.


3 Diameters
6 Diameters
3 Diameters
Diameters or Modules.
1
2
3
4
5
6
7
1
2
3
4
5
1
2
3
4
5

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.


Our Father
Exodus Chap XX
I
II
III
IV
V
VI
VII
VIII
IX
X
יהוה
I Beleive.
A
1
2
3
4
5
6
7

Tuscan Altar Piece.

Batty Langley
Invent and
Delin. 1739.

Thos. Langley
Sculp.

An Ionick Altar Piece.

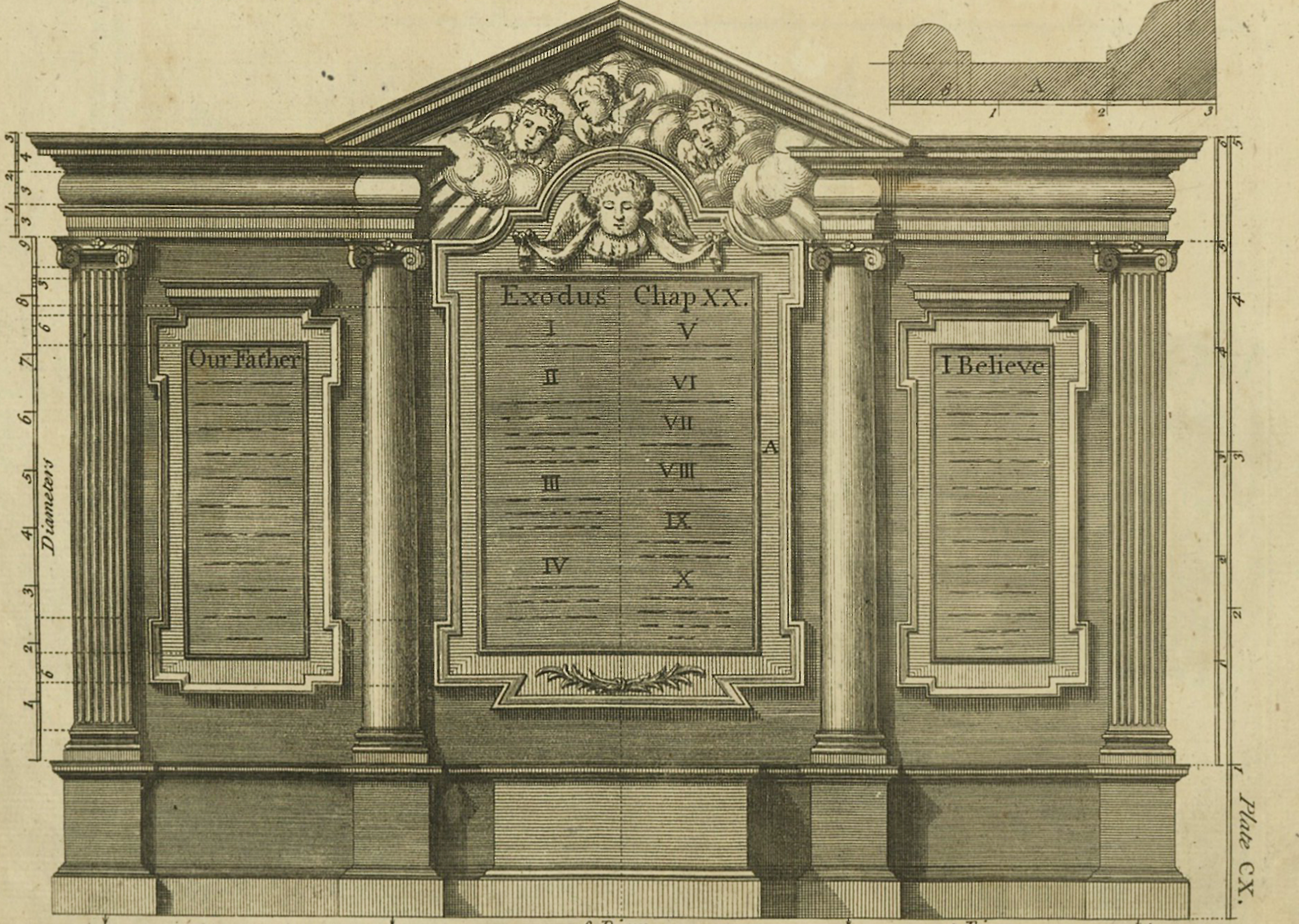
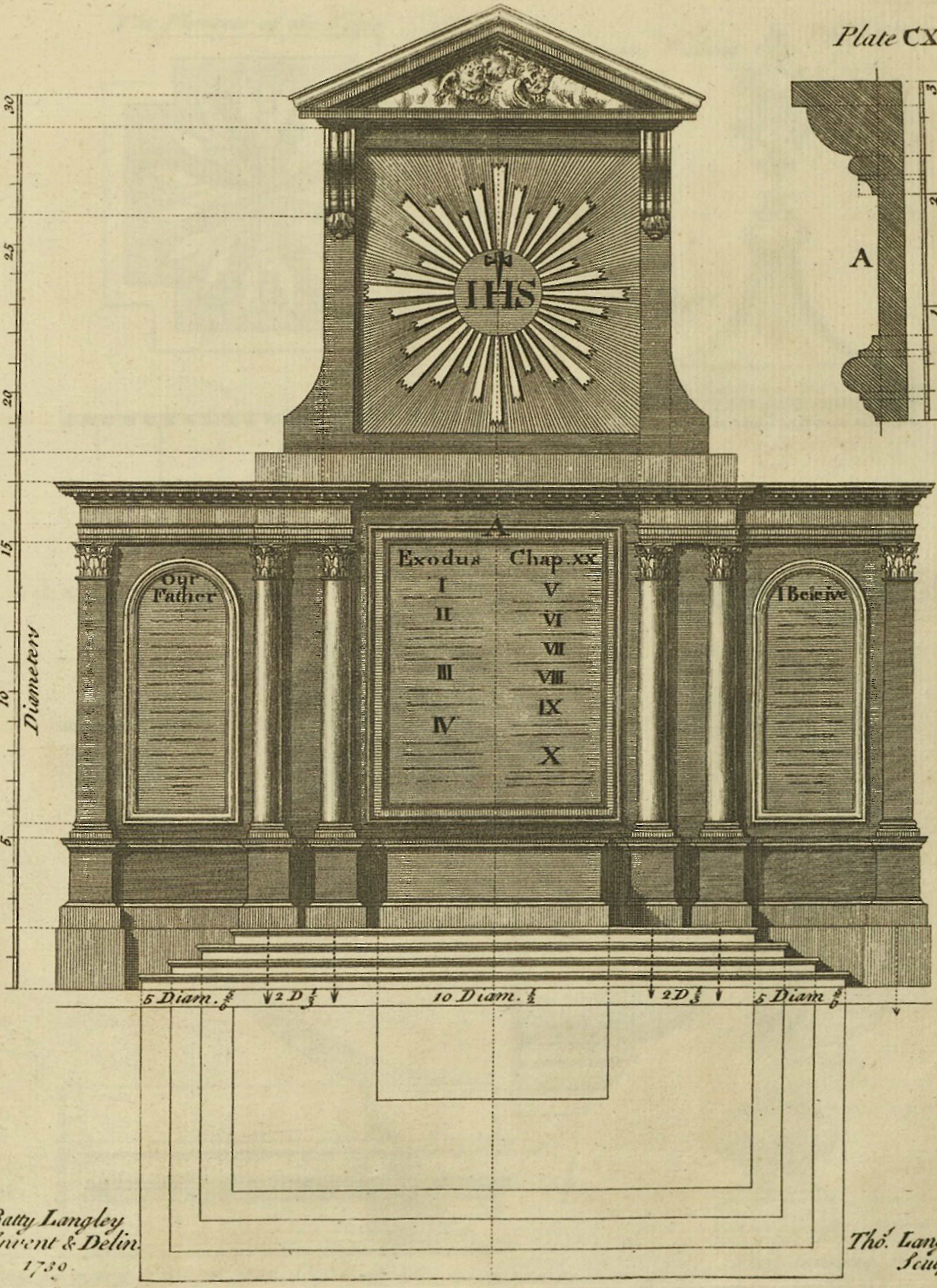

Exodus Chap XX.
I
II
III
IV
V
VI
VII
VIII
IX
X
Our Father
I Believe
A
B
Diameters
1
2
3
4
5
6
7
8
9
5 Diam.
8 Diam.

Plate CX.

Batty Langley Invent and Delin. 1739.

Tho.s Langley Sculp.

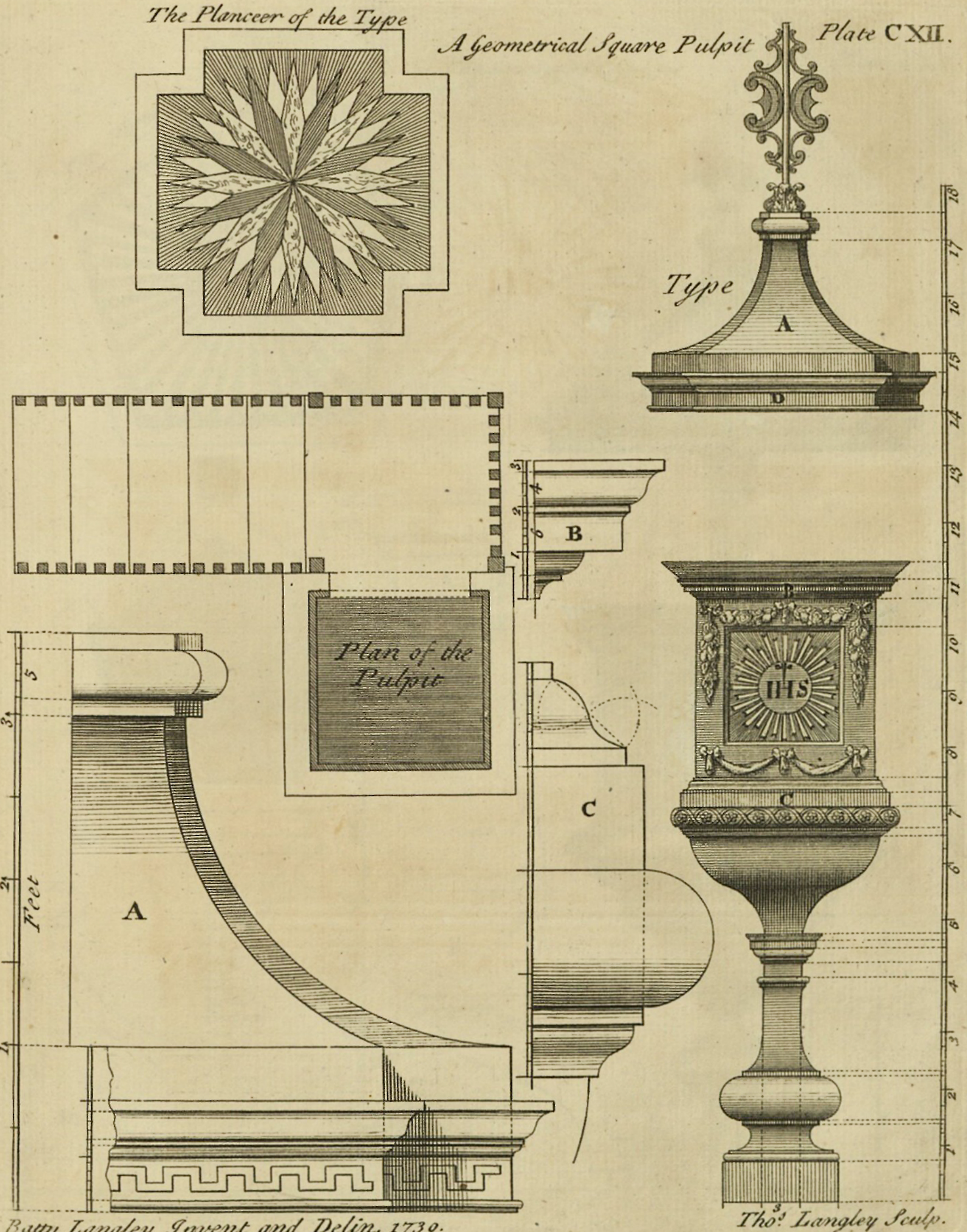

30
25
20
15
10
5
Diameters
A
1
2
3
A
IHS
Exodus
Chap. XX
I
II
III
IV
V
VI
VII
VIII
IX
X
Our Father
I Beleive
5 Diam. 5/6
2 D 1/3
10 Diam. 1/2
2 D 1/3
5 Diam 5/6

Batty Langley
Invent & Delin
1730

Thoˢ. Langley
Sculp.

A Geometrical Square Pulpit

Plate CXII.

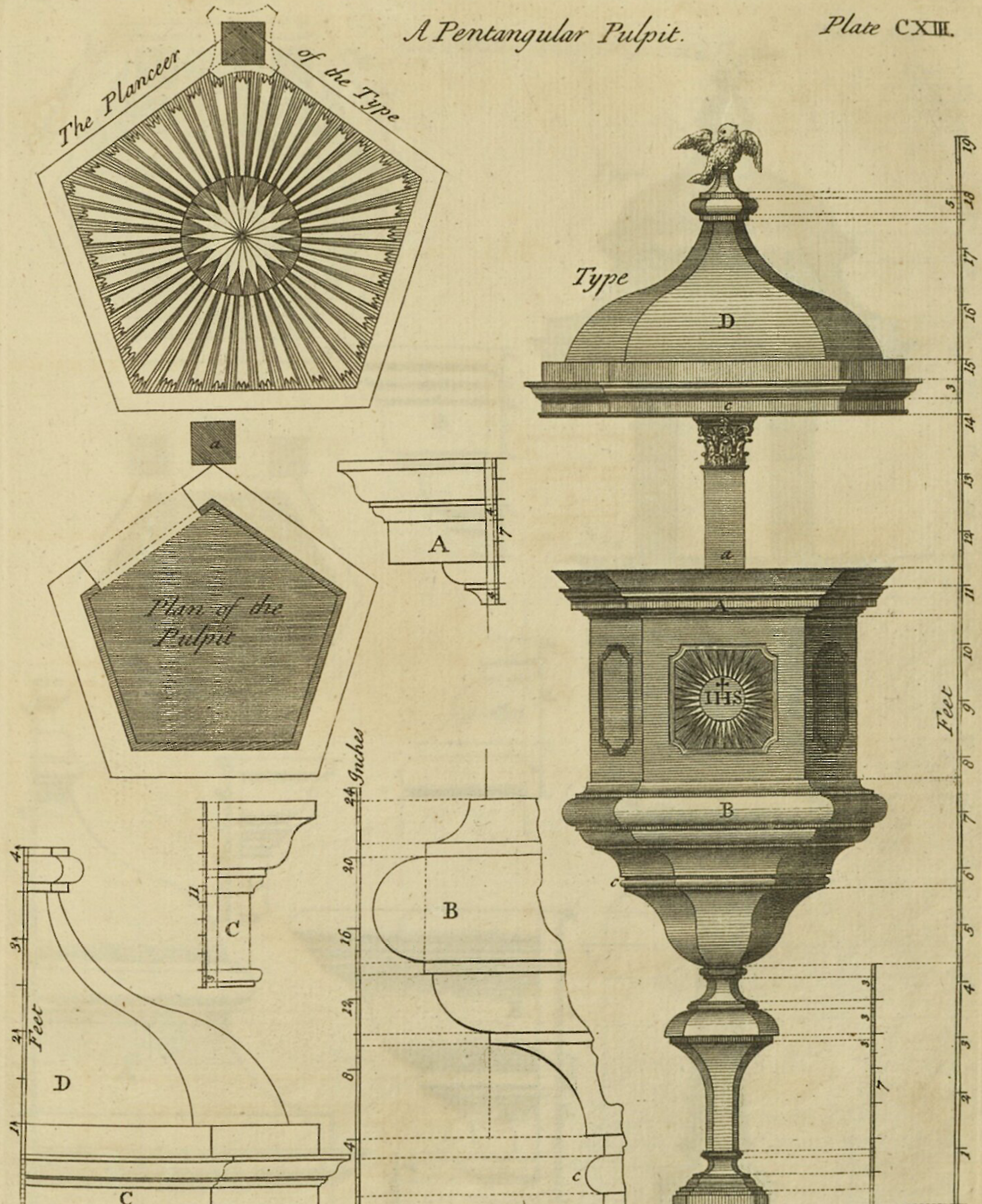

The Planceer of the Type
Type
A
D
B
Plan of the Pulpit
B
IHS
C
A
C
Feet
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

A Pentangular Pulpit.

Plate CXIII.

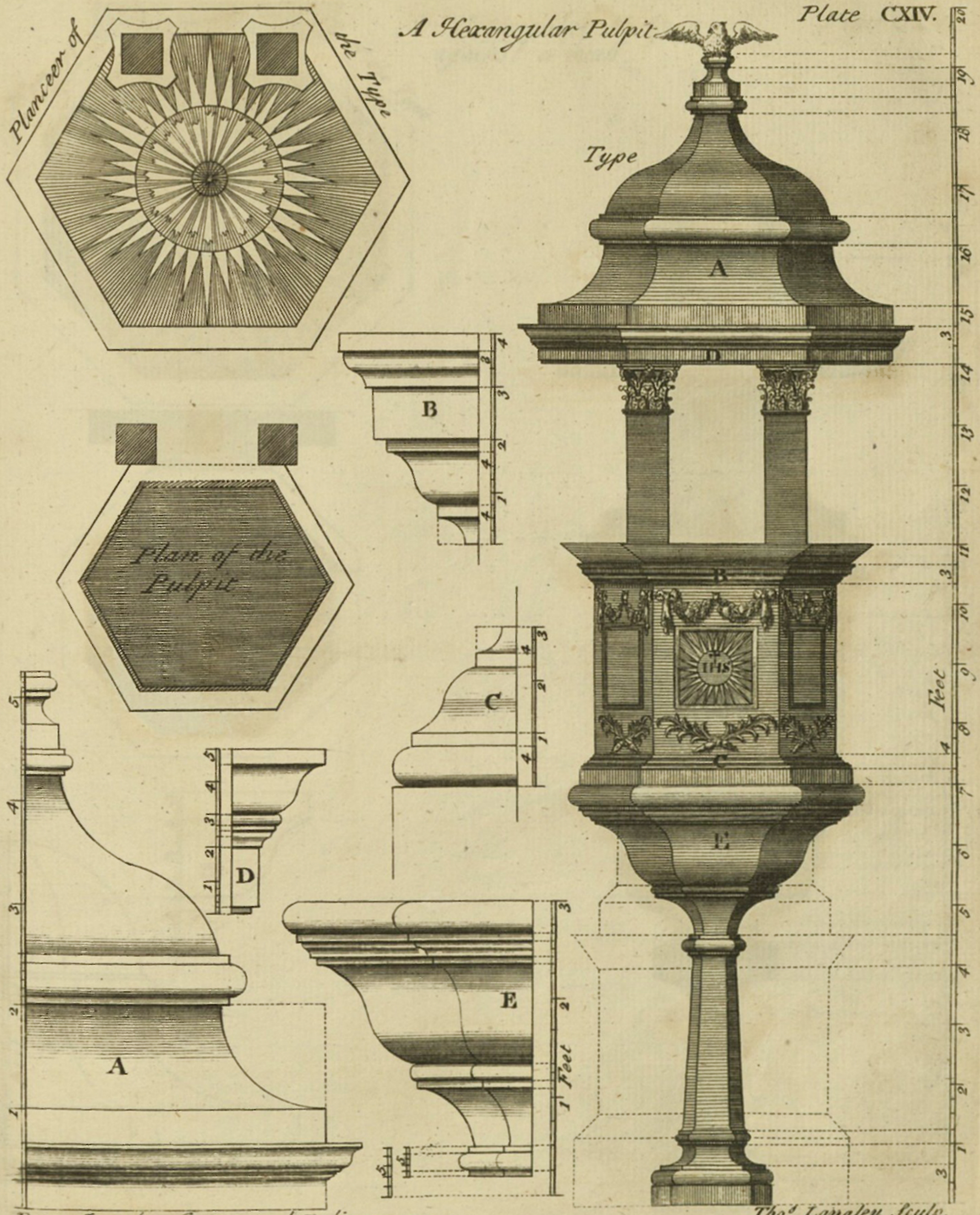


The Planceer of the Type
a
Plan of the Pulpit
A
B
C
D
c
Type
IHS
Feet
Inches
24
20
16
12
8
4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

Batty Langley Invent and Delin. 1739.

Thoˢ Langley Sculp.

A Hexangular Pulpit

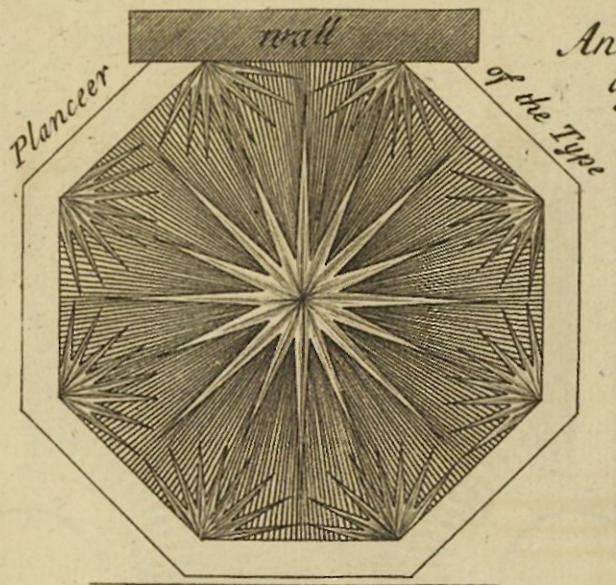

Planceer of the Type
Type
A
D
B
C
E
Plan of the Pulpit
IHS
Feet
Feet

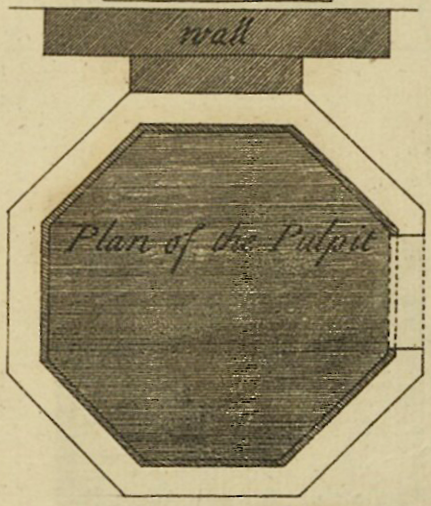
Batty Langley Invent and Delin. 1739.

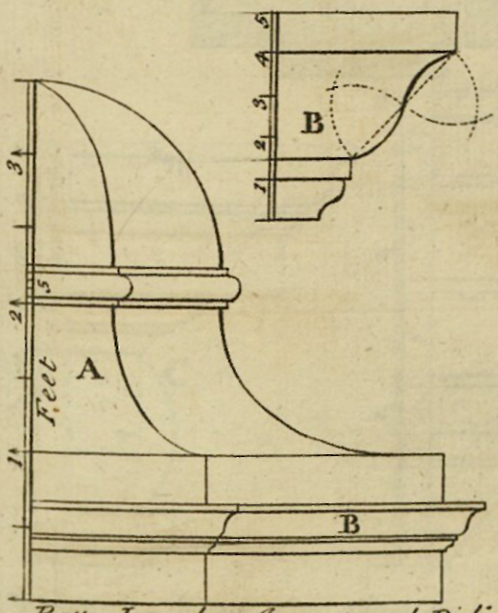
Thoˢ Langley Sculp.

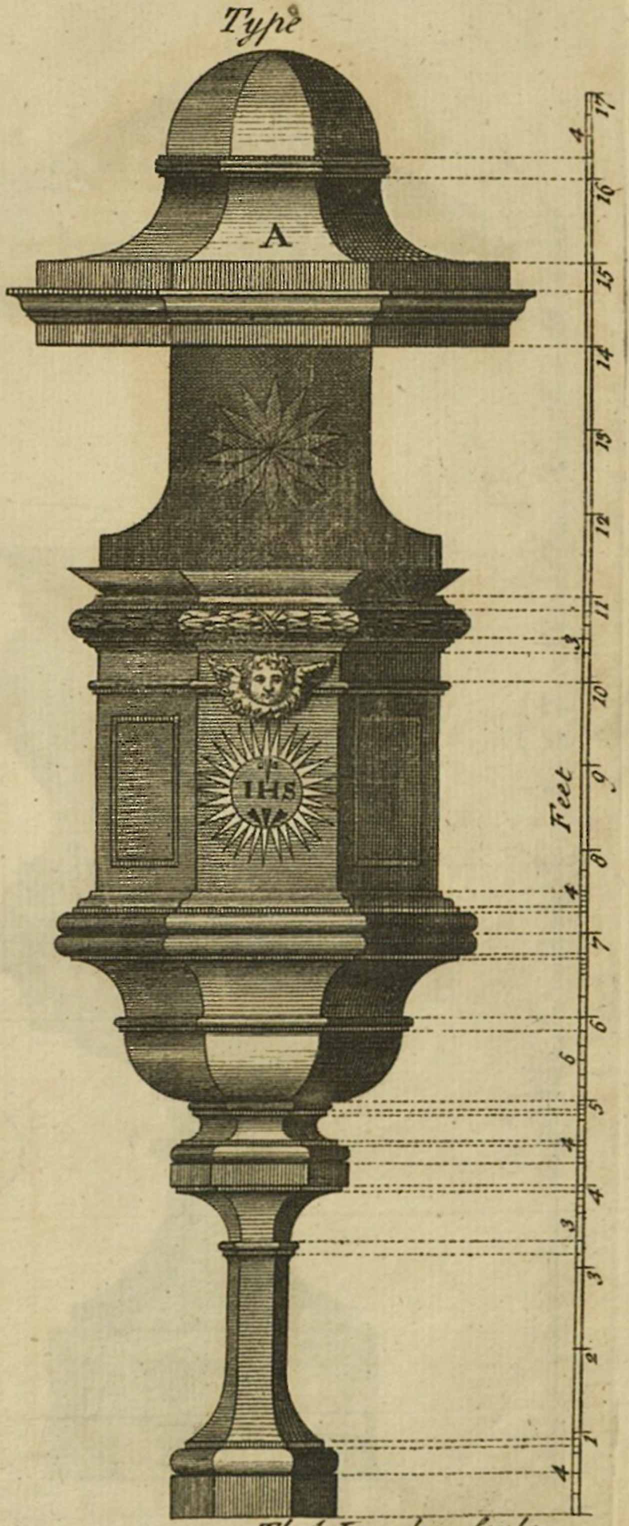
An Octangular Pulpit against a wall.

Plate CXV.


wall
Planceer of the Type


wall
Plan of the Pulpit

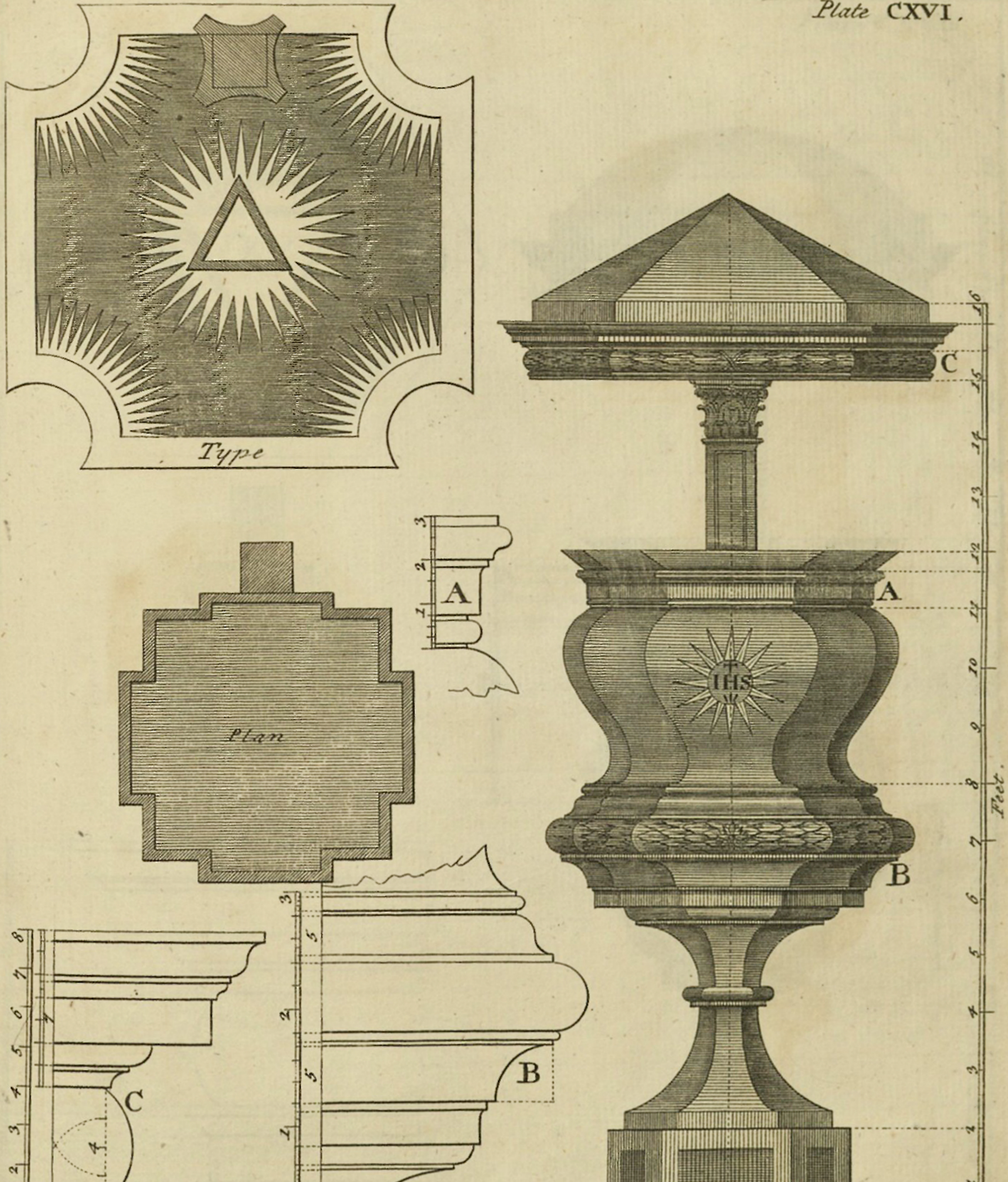

5
4
3
B
2
1
3
5
2
A
Feet
1
B


Type
A
IHS
Feet
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

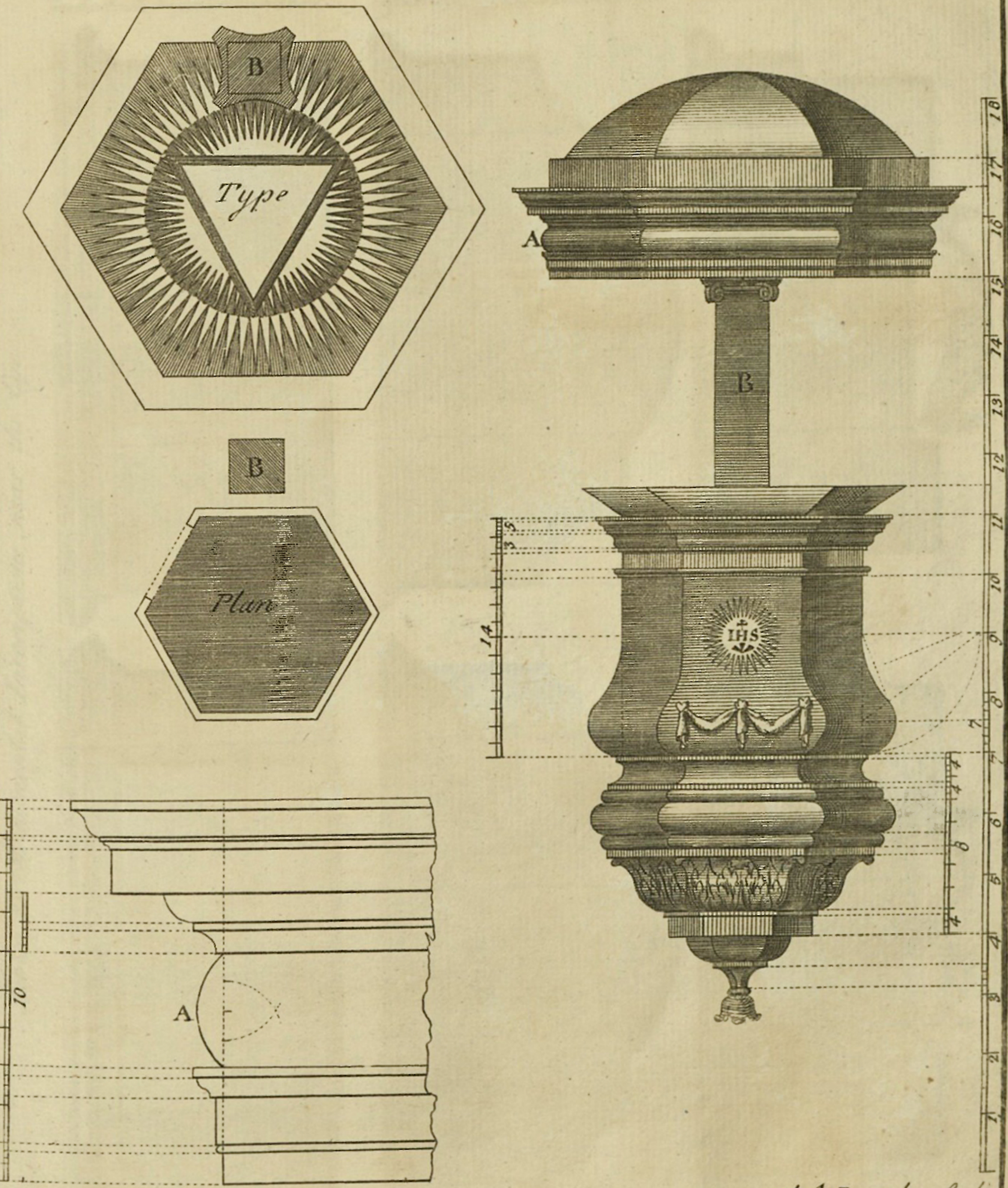
Plate CXVI.


Type
Plan
A
B
C
IHS
Feet
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Batty Langley Invent and delin 1739.

Thoˢ. Langley Sculp

Plate CXVII.

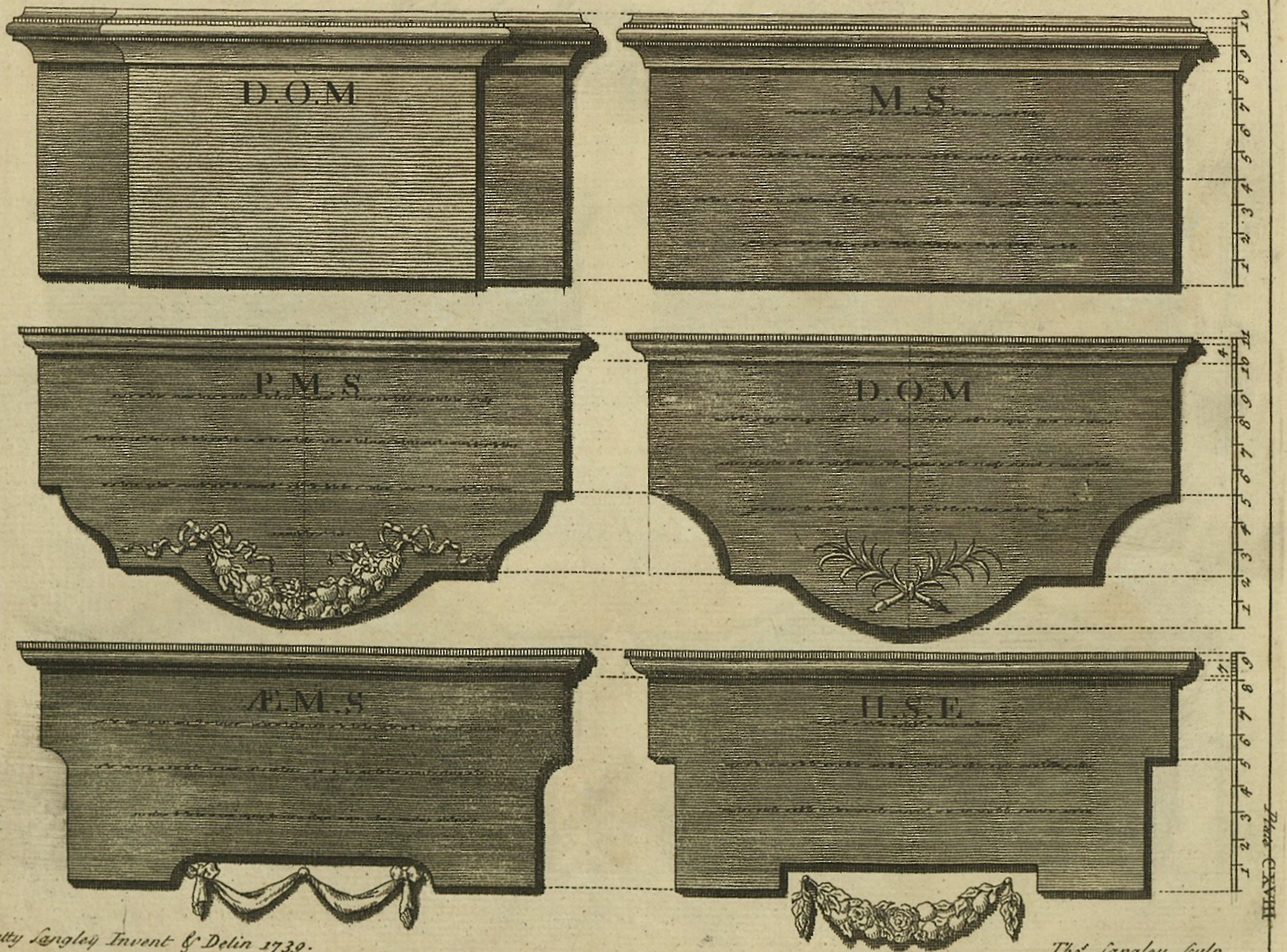

B
Type
B
Plan
A
B
IHS
14
3
5
10
A
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
4
8
4

Batty Langley Invent and Delin. 1739.

Tho.ˢ Langley Sculp.

Plate CXVIII

Tables for Monumental Inscriptions, near the Eye,

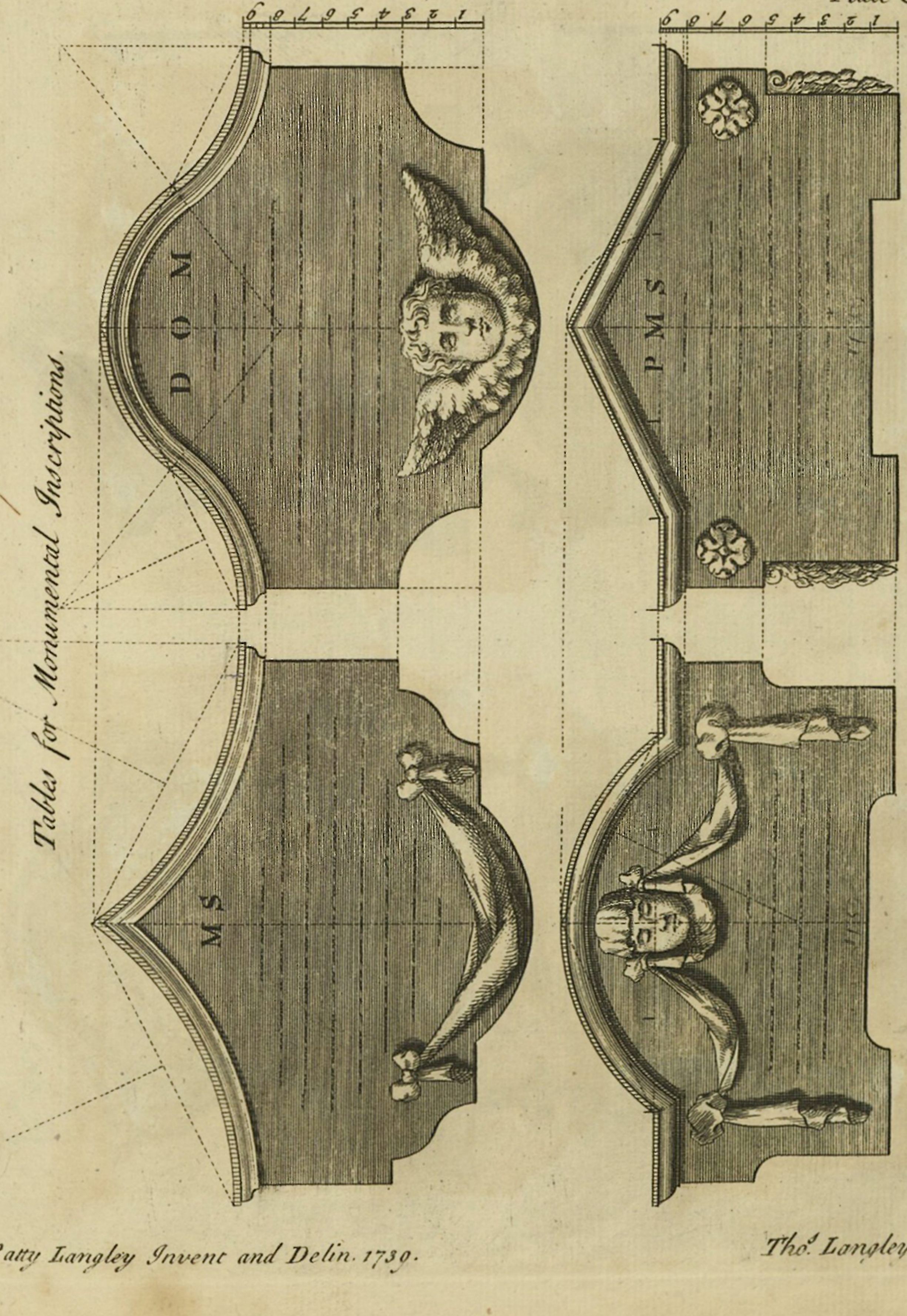

D.O.M
M.S
P.M.S
D.O.M
Æ.M.S
H.S.E
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10 11
4
1 2 3 4 5 6 7 8 9
4

Batty Langley Invent & Delin 1739.

Thoˢ Langley Sculp.

Plate CXIX.

Tables for Monumental Inscriptions.


1 2 3 4 5 6 7 8 9
D O M
M S
1 2 3 4 5 6 7 8 9
P M S

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

Tables for Monumental Inscriptions,

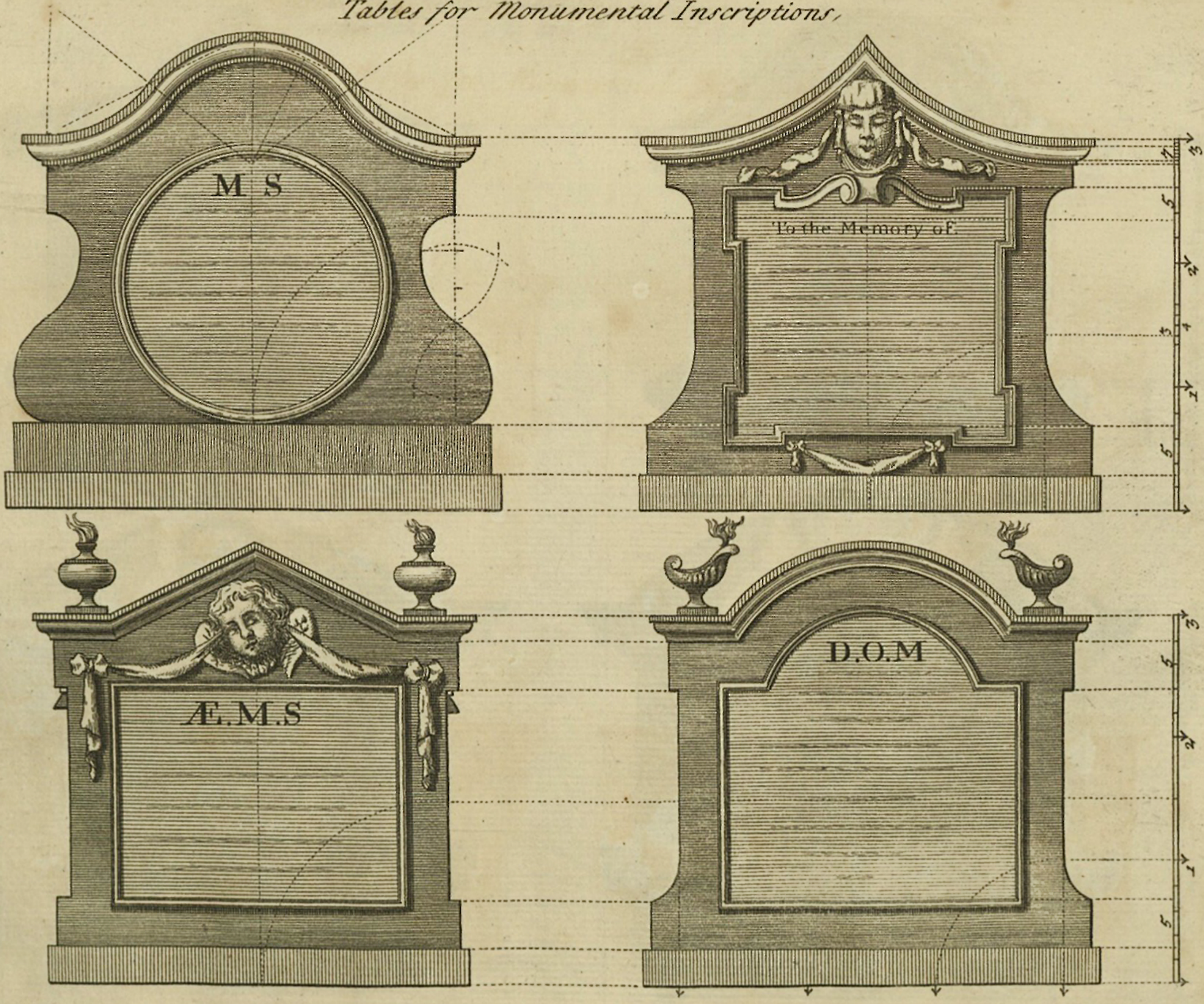
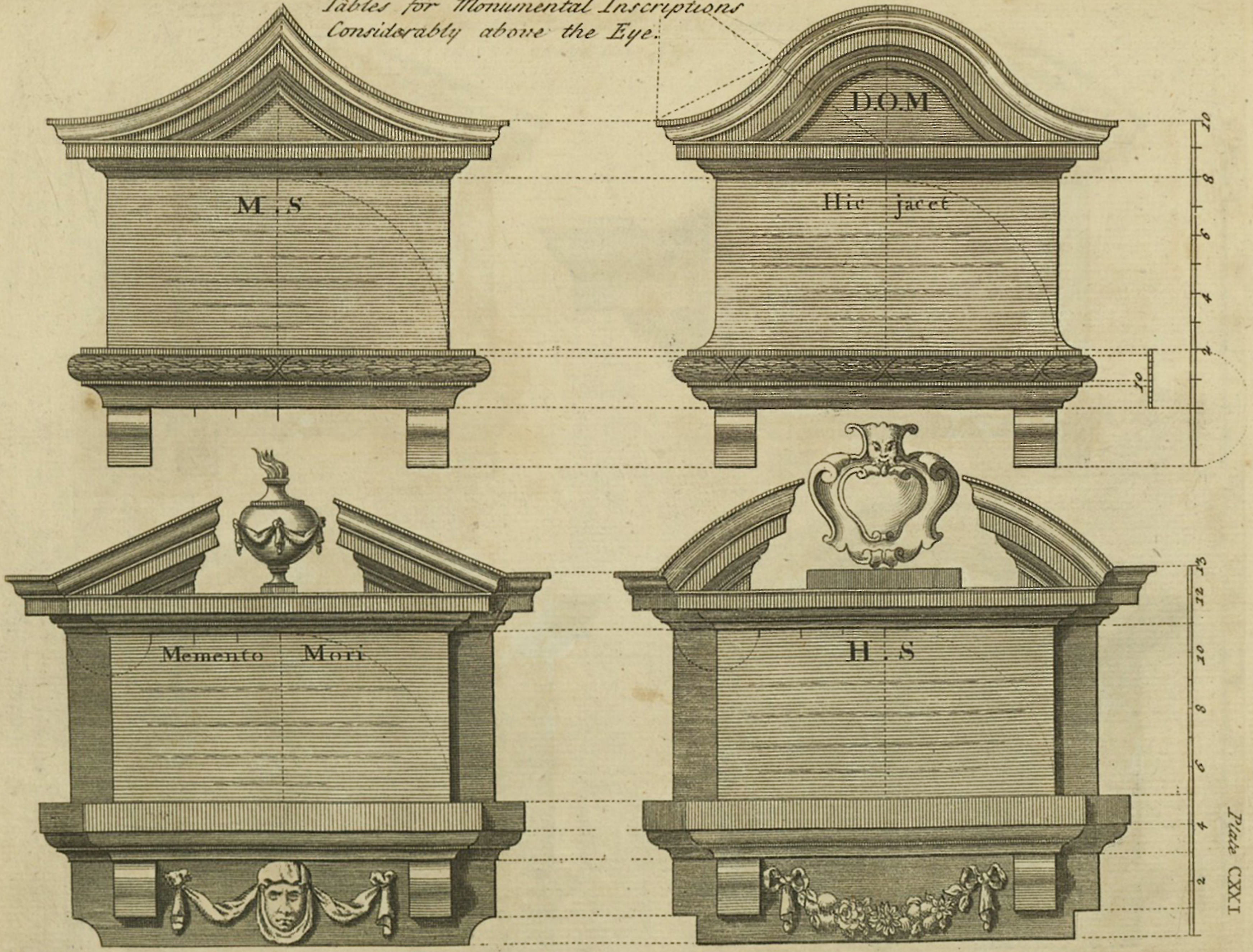

M S
To the Memory of.
Æ.M.S
D.O.M

Plate CXX

Batty Langley Invent and delin 1739

Thoſ. Langley Sculp.

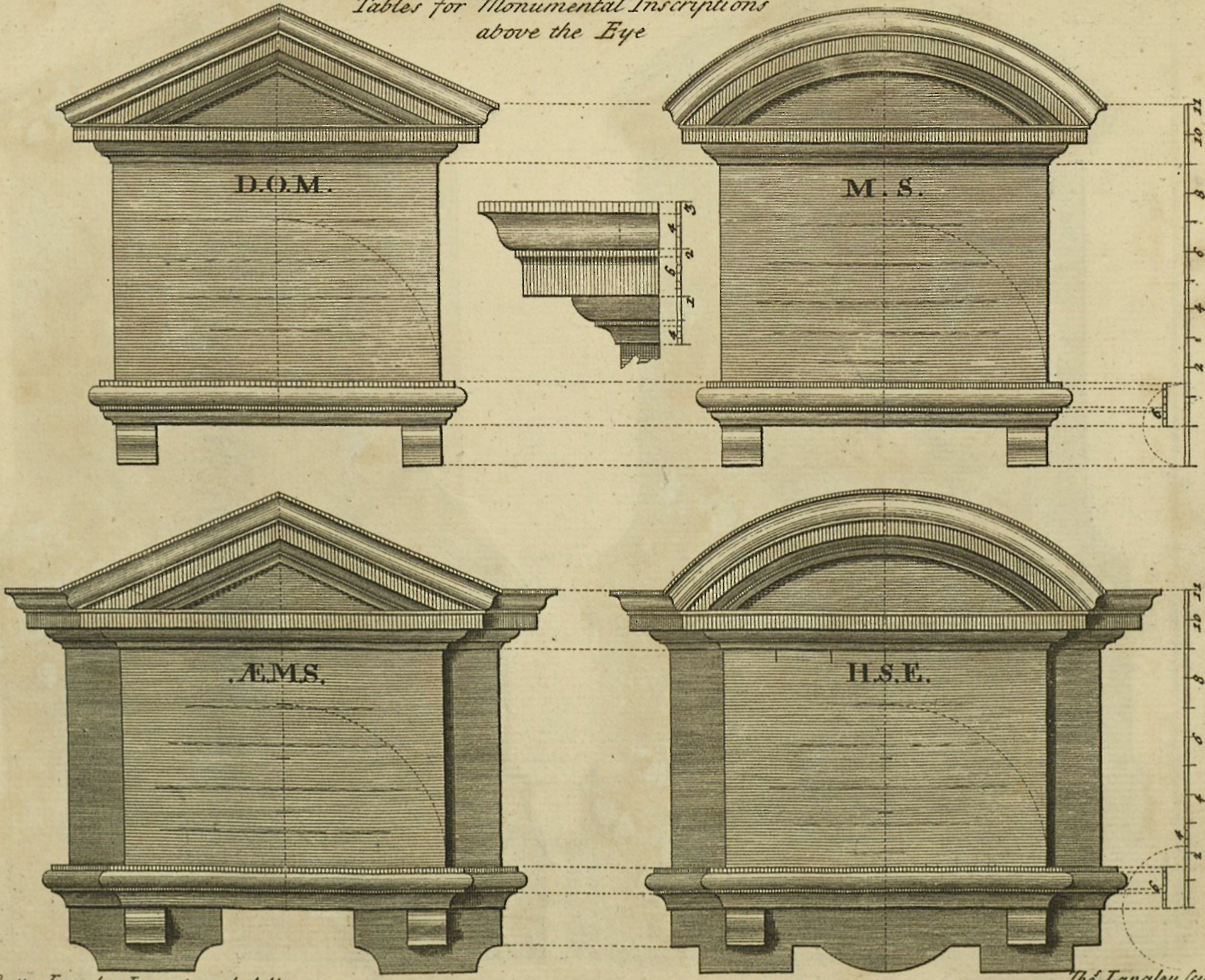
Tables for Monumental Inscriptions Considerably above the Eye.


M.S
D.O.M
Hic jacet
10
8
6
4
2
10
Memento Mori
H.S
13
12
10
8
6
4
2

Batty Langley Invent and delin 1739.

Thoˢ. Langley Sculp.

Tables for Monumental Inscriptions above the Eye

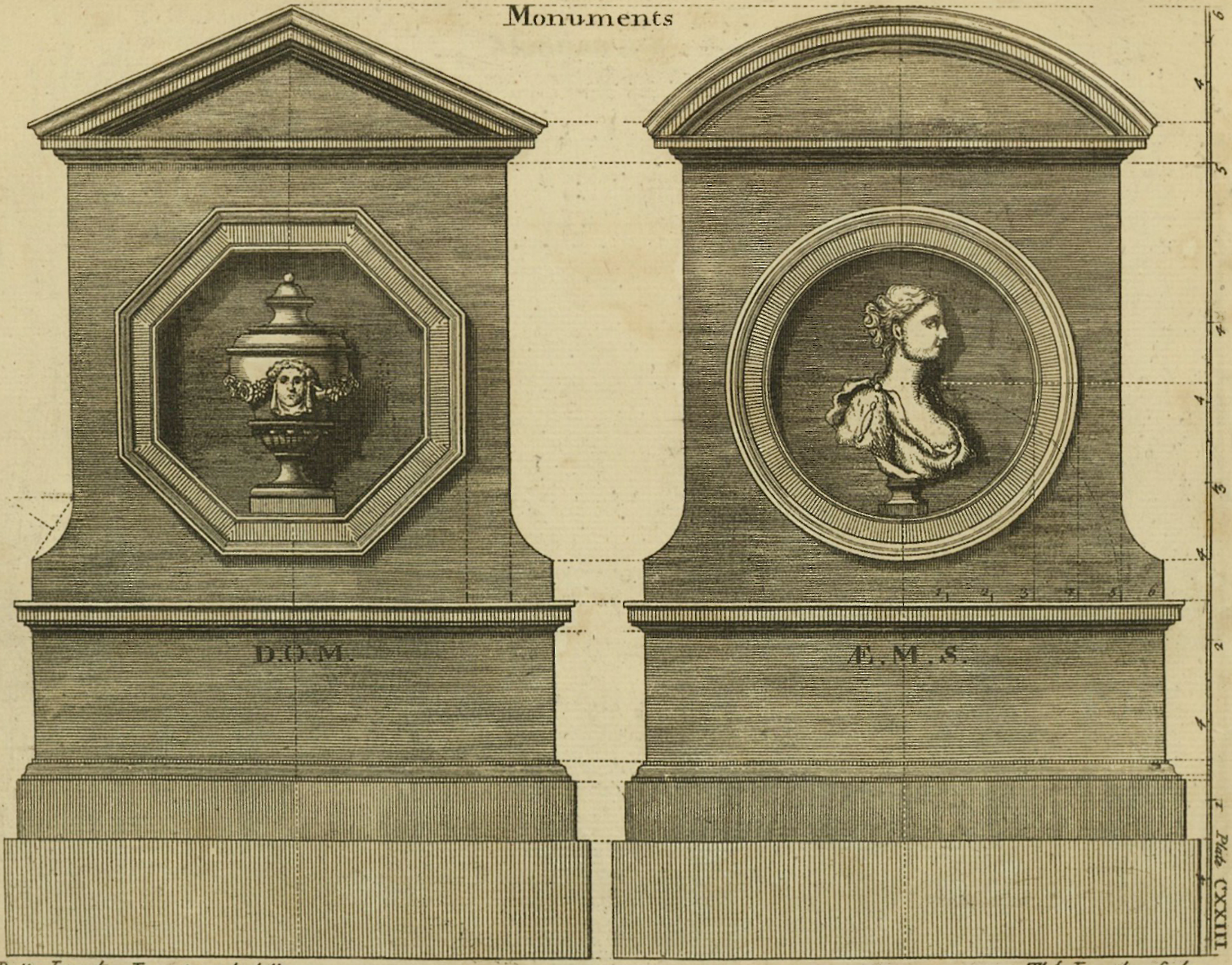

D.O.M.
M.S.
.Æ.M.S.
H.S.E.
11
10
8
6
4
2
3
4
2
6
1
4

Batty Langley Invent and delin 1739

Thoˢ. Langley Sculp.

Plate CXXIII

Monuments

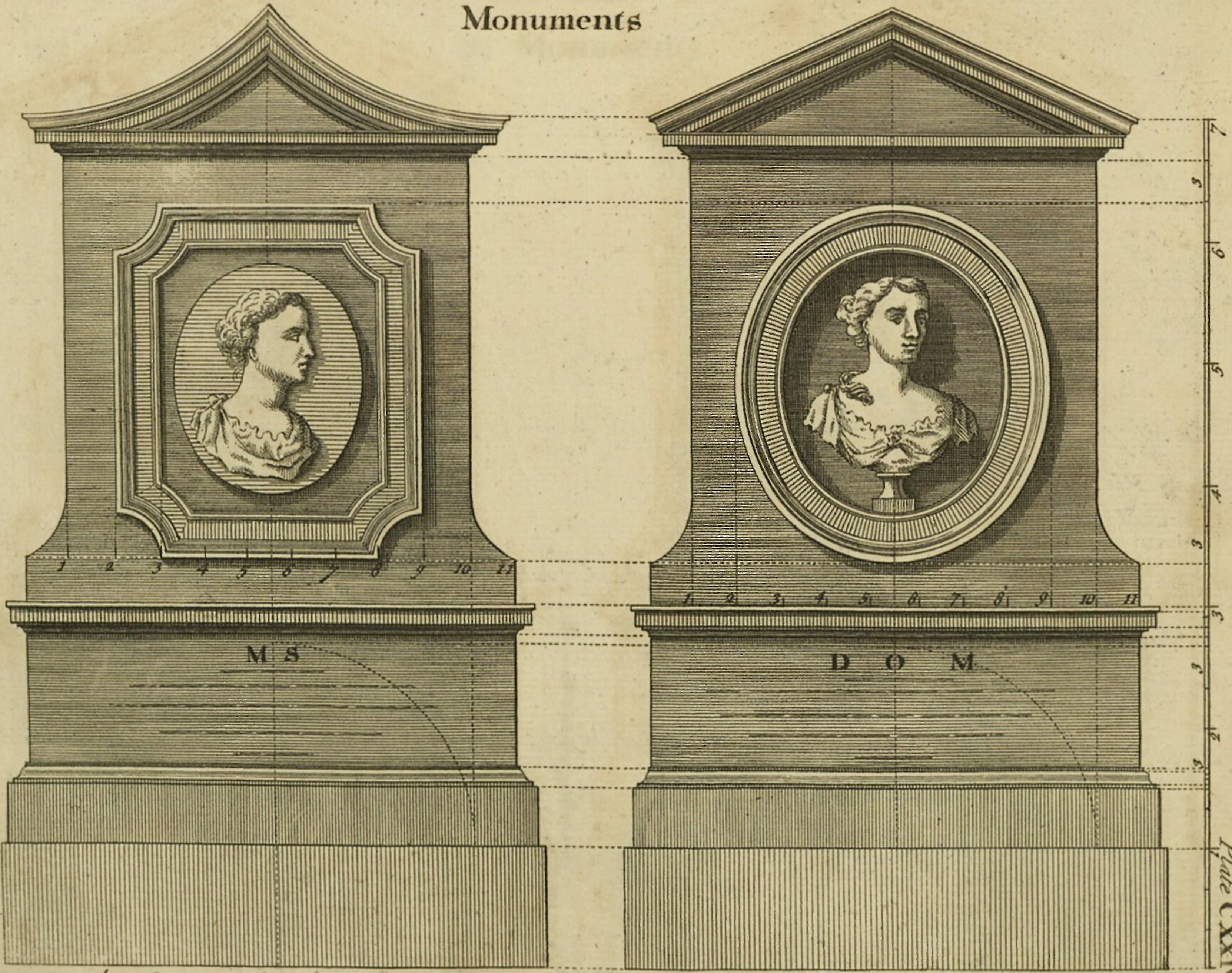

D.O.M.
Æ.M.S.
1
2
3
4
5
6
1
2
3
4
5
6
4
4
4
4
4

Batty Langley Invent and delin 1739.

Thō Langley Sculp.

Monuments

Plate CXXIV.


M S
D O M
1
2
3
4
5
6
7
8
9
10
11
7
3
6
5
4
3
3
3
2
3
1

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Monuments.

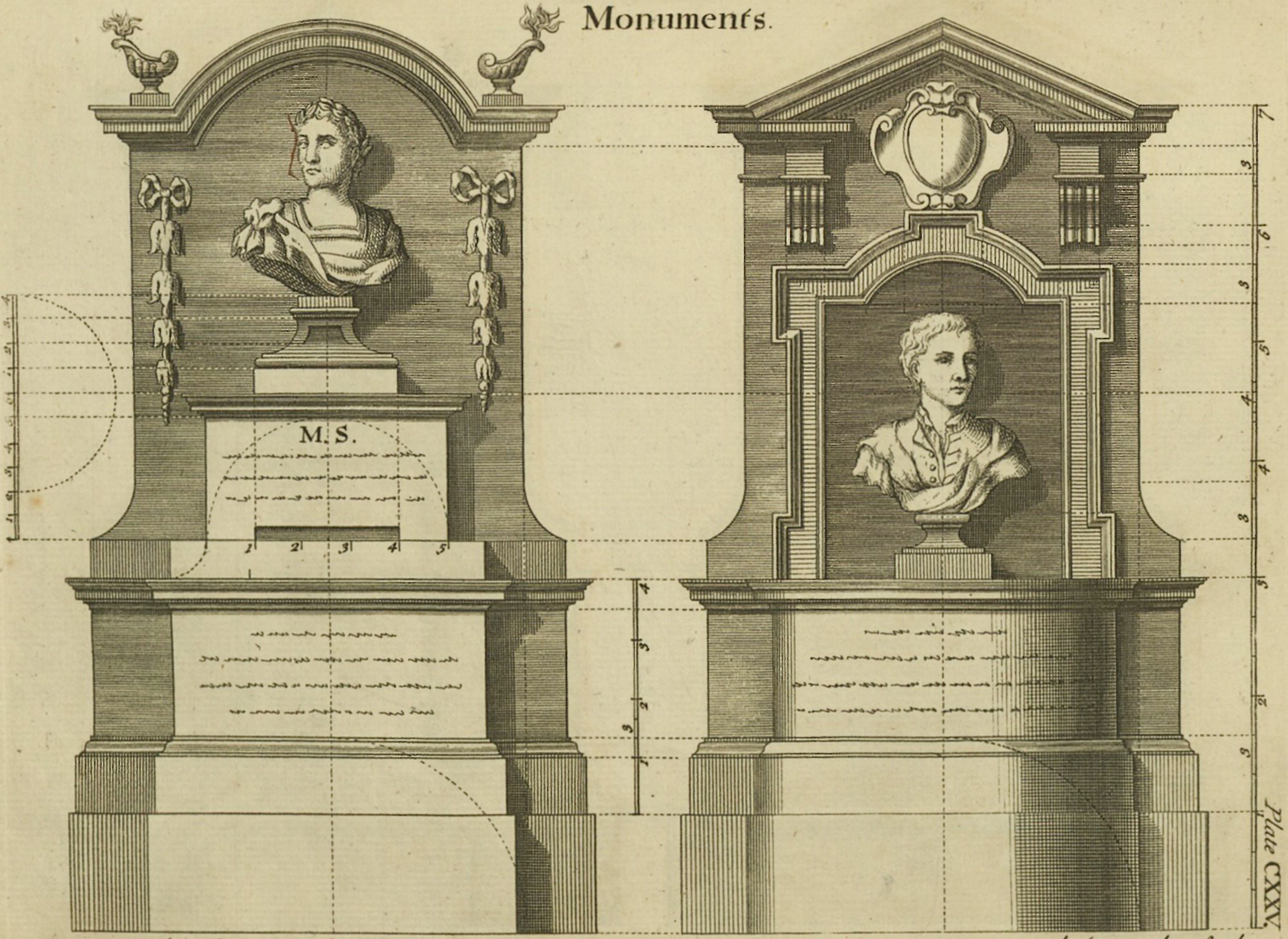

M.S.
1 2 3 4 5
1 2 3 4
1 2 3 4 5 6 7

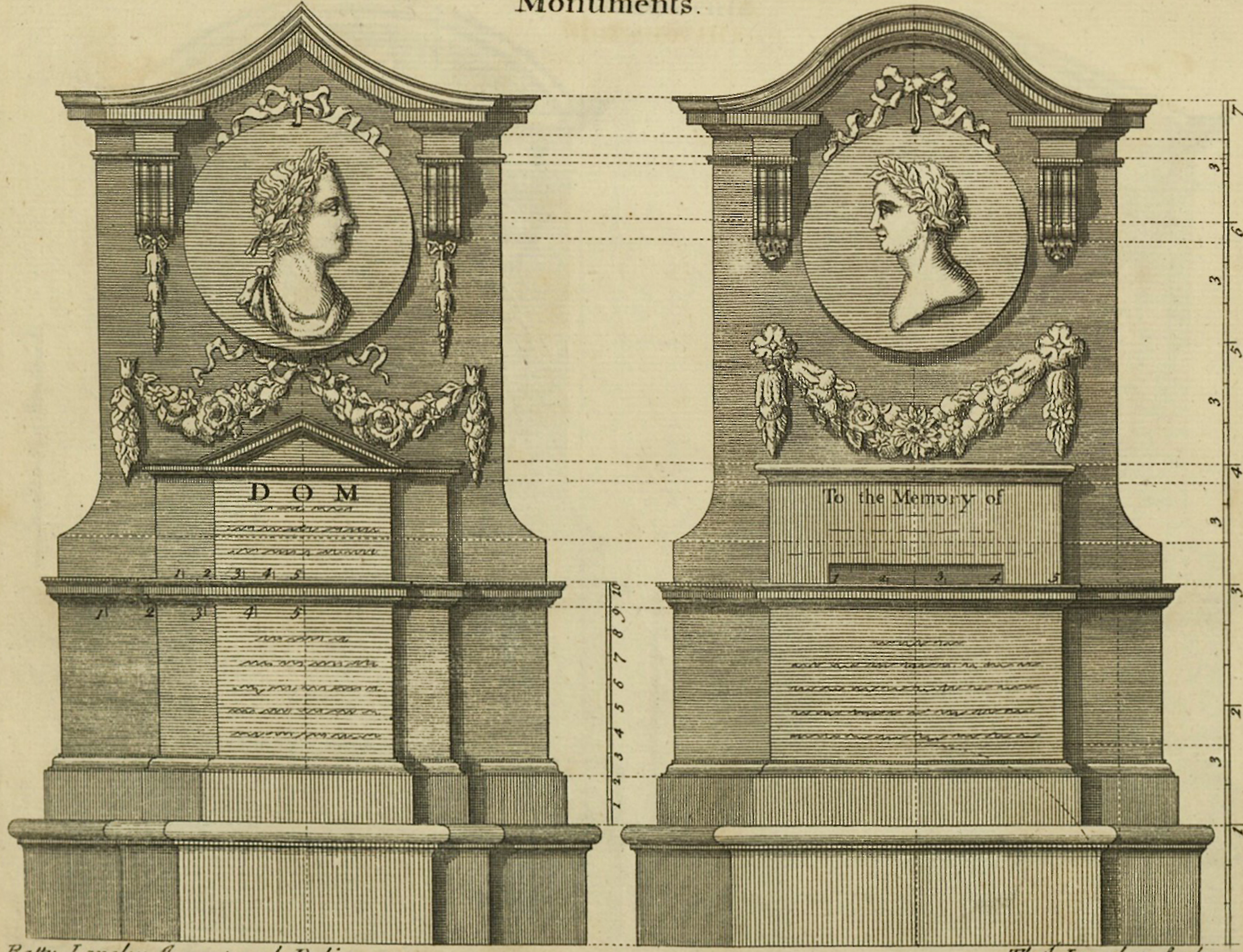
Plate CXXV.

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

Monuments.

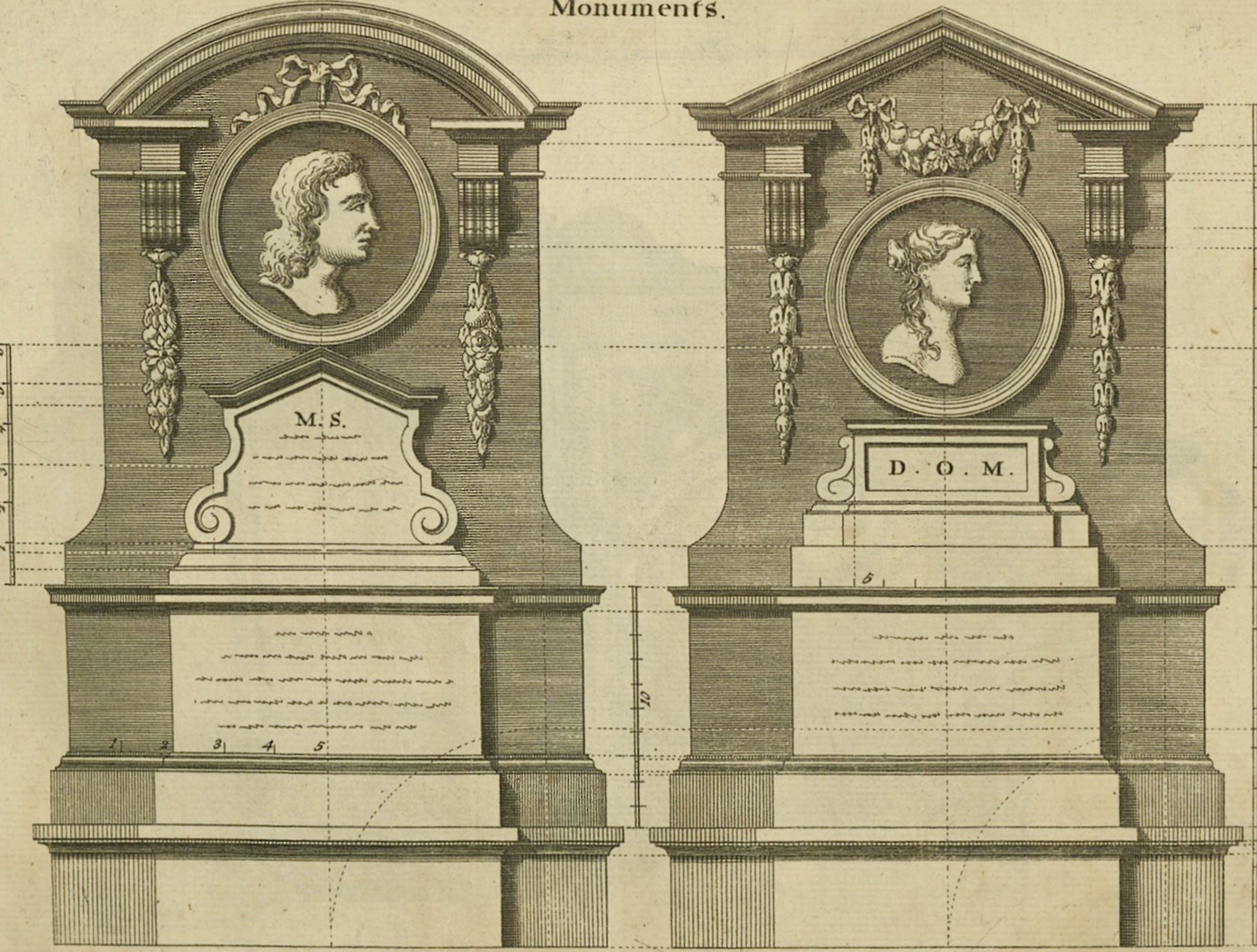
Plate CXXVI.


DOM
1 2 3 4 5
1 2 3 4 5
To the Memory of
1 2 3 4 5
1 2 3 4 5 6 7 8 9 10
1 3 2 3 3 3 4 3 5 3 6 3 7

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Monuments.

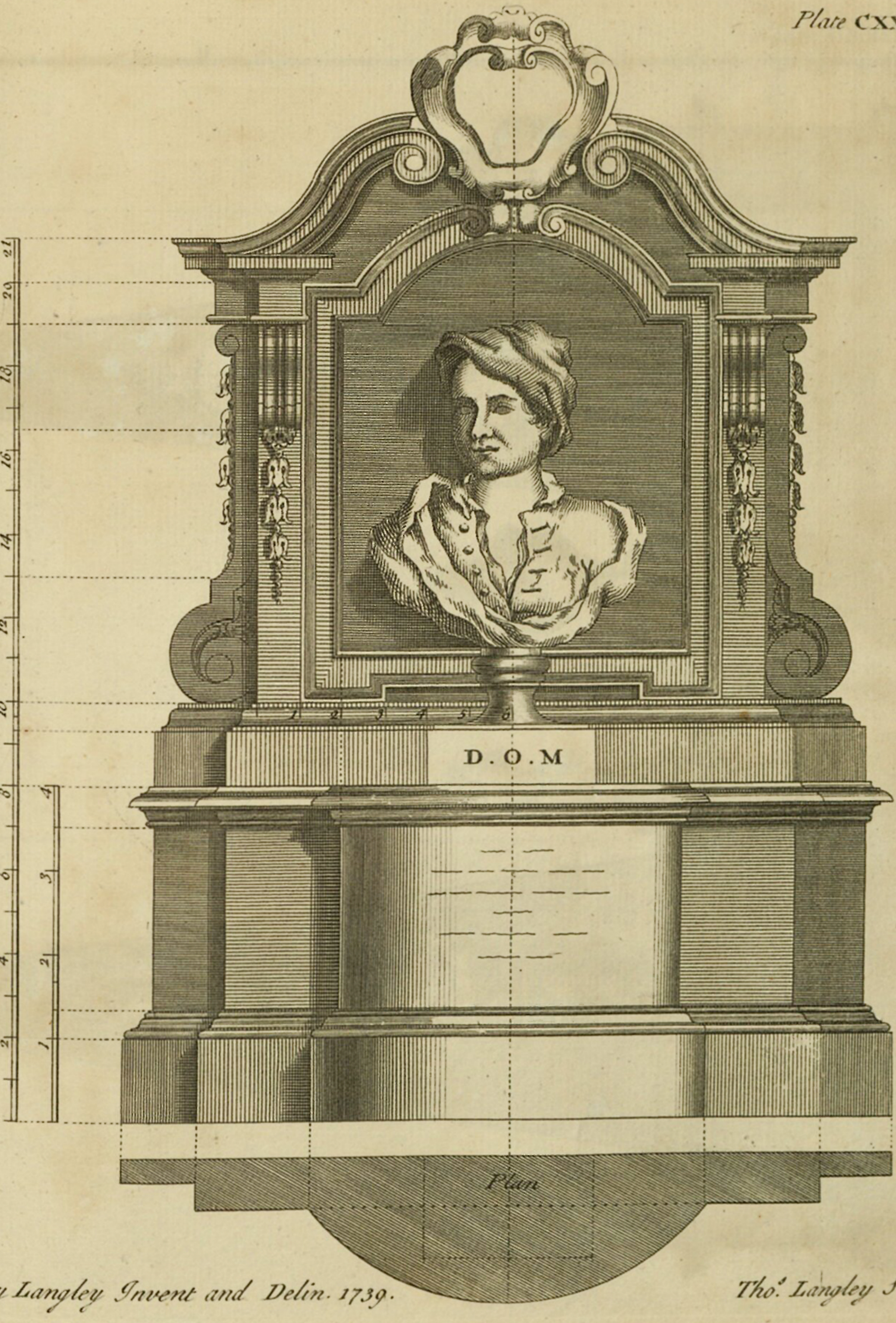

M. S.
D. O. M.
1
2
3
4
5
6
1
2
3
4
5
10
5
1
2
3
4
5
6
7

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

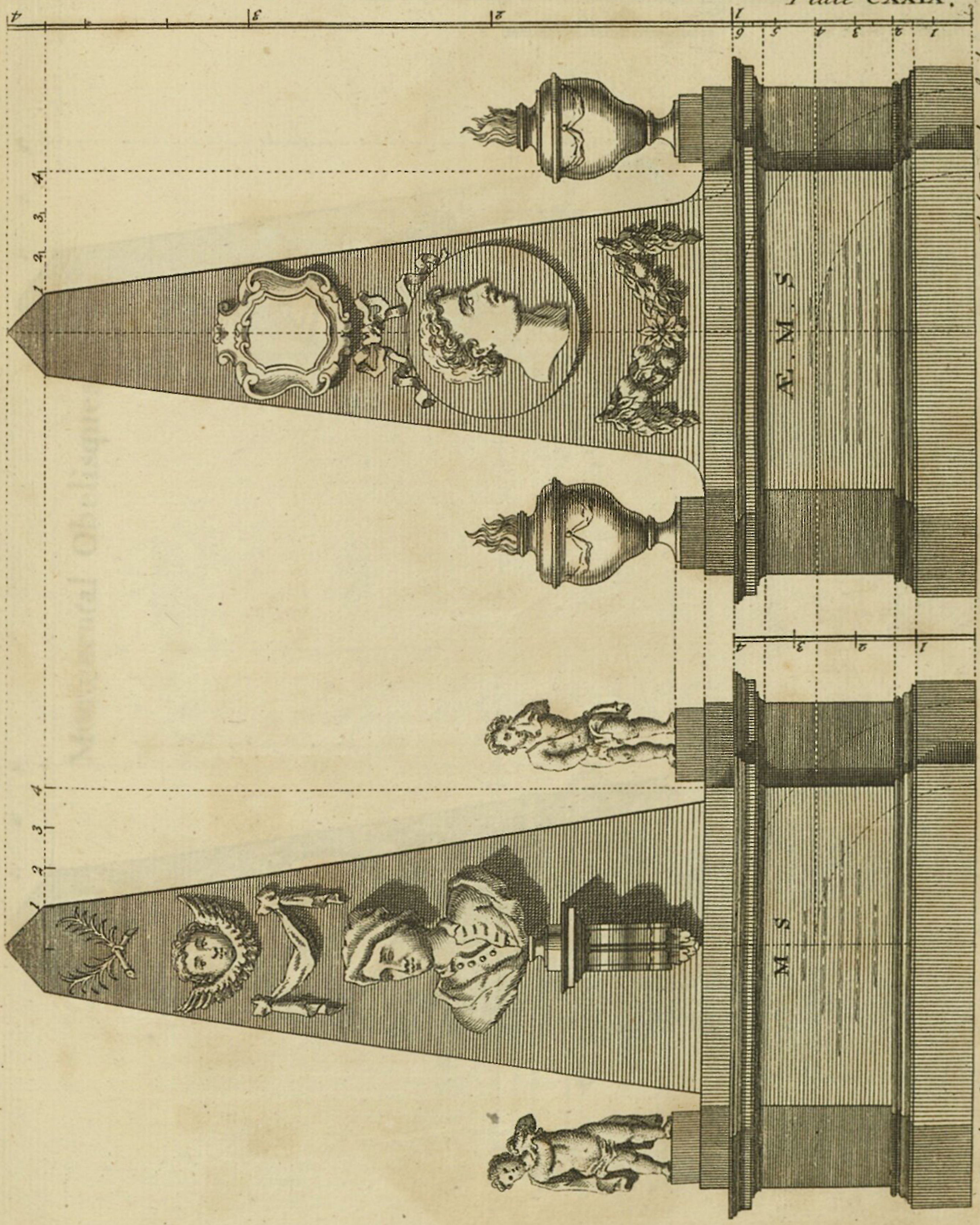
Plate CXXVII.

Plate CXXVIII


21
20
18
16
14
12
10
8
6
4
2
4
3
2
1
1
2
3
4
5
6
D.O.M
Plan

Batty Langley Invent and Delin. 1739. *Thoˢ. Langley Sculp.*

Plate CXXIX.



M S
Æ. M. S
1
2
3
4
5
6

Batty Langley Invent and Delin. 1739.

Thoˢ Langley Sculp.

Monumental Obelisques

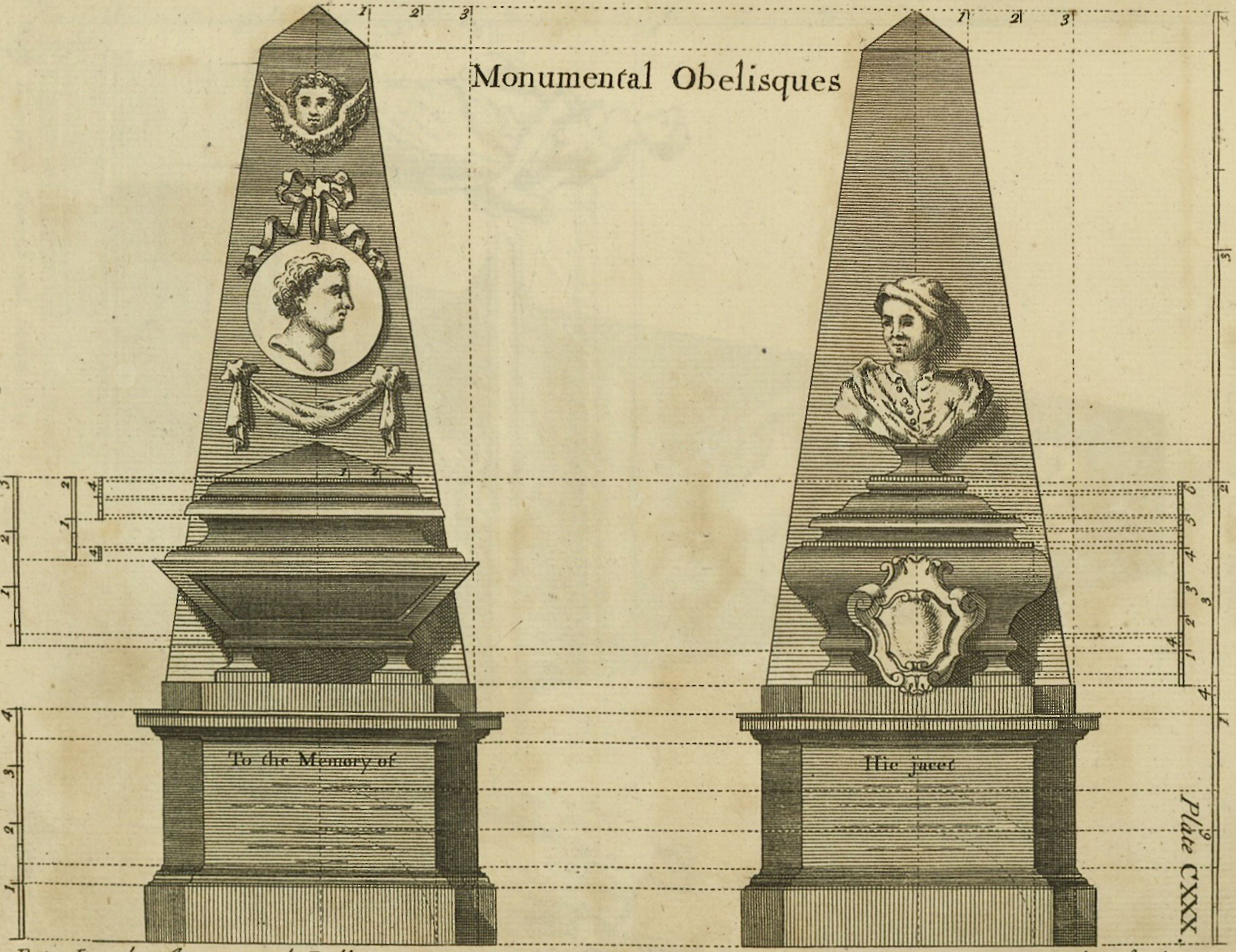

To the Memory of
Hic jacet
1
2
3
4
5
6

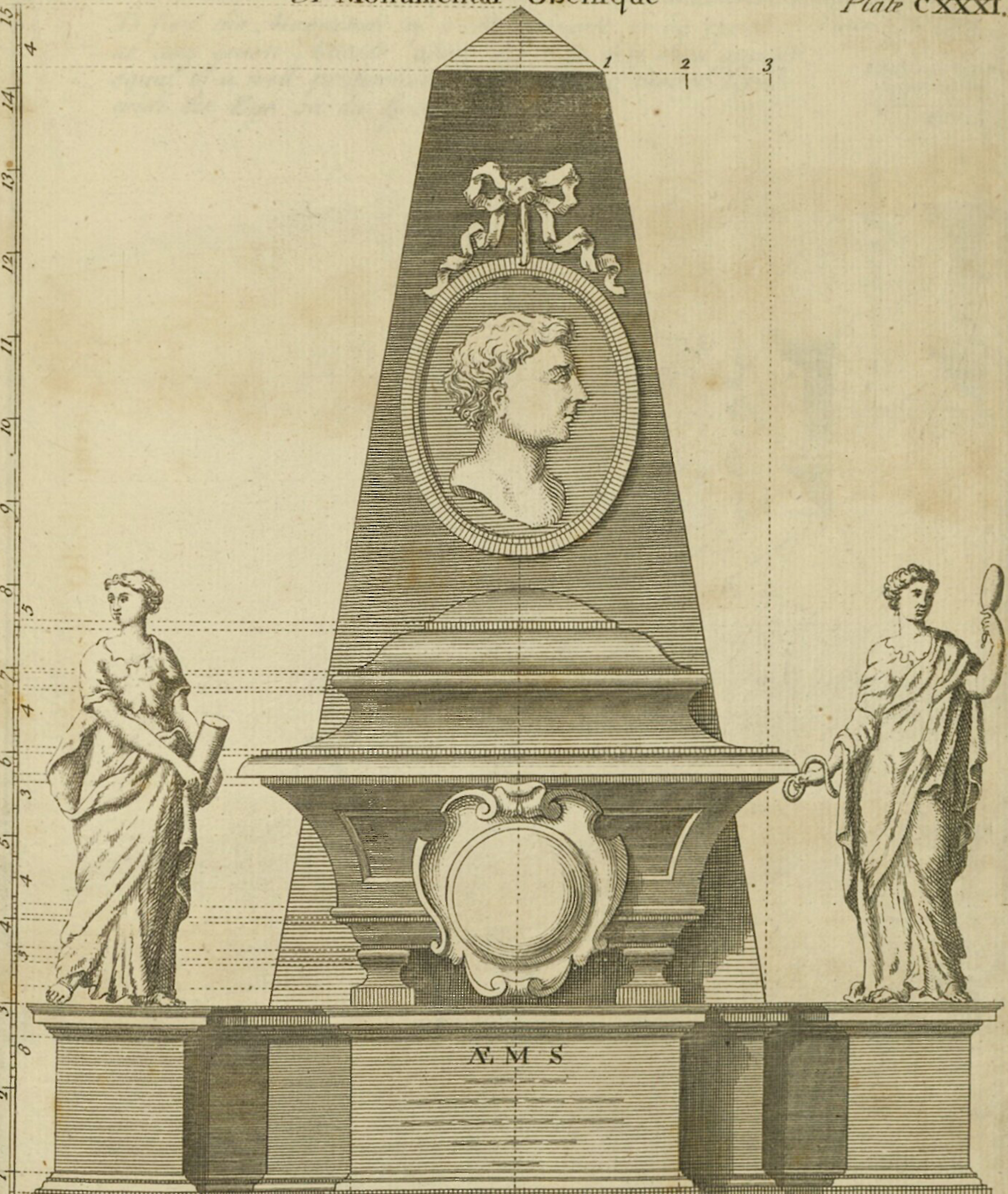
Plate CXXX.

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

A Monumental Obelisque

Plate CXXXI.

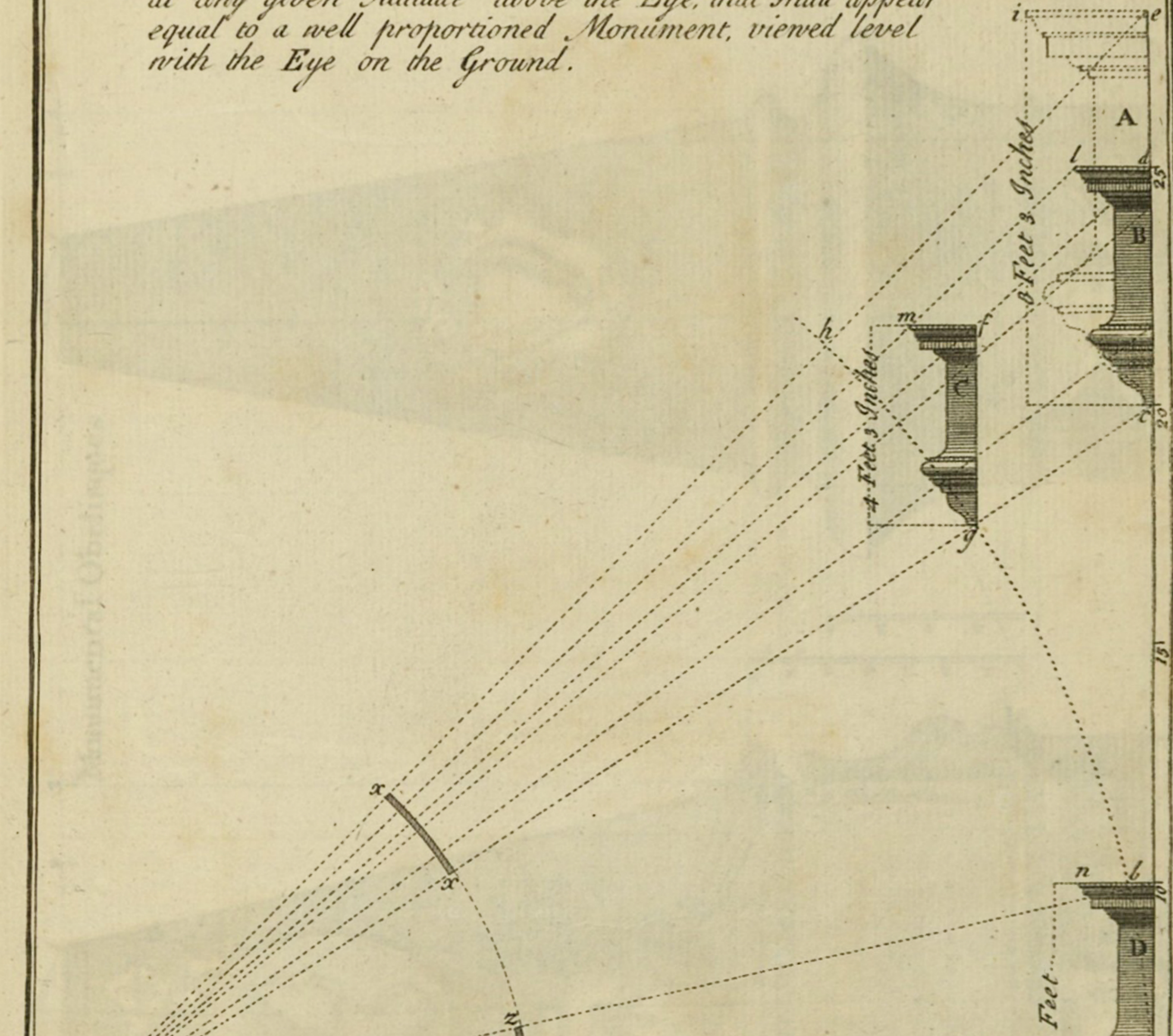

15
4
14
13
12
11
10
9
8
5
7
4
6
3
5
4
4
3
3
8
2
1
4
1
2
3
Æ M S

Batty Langley Invent and Delin. 1739.

Thoˢ Langley Sculp.

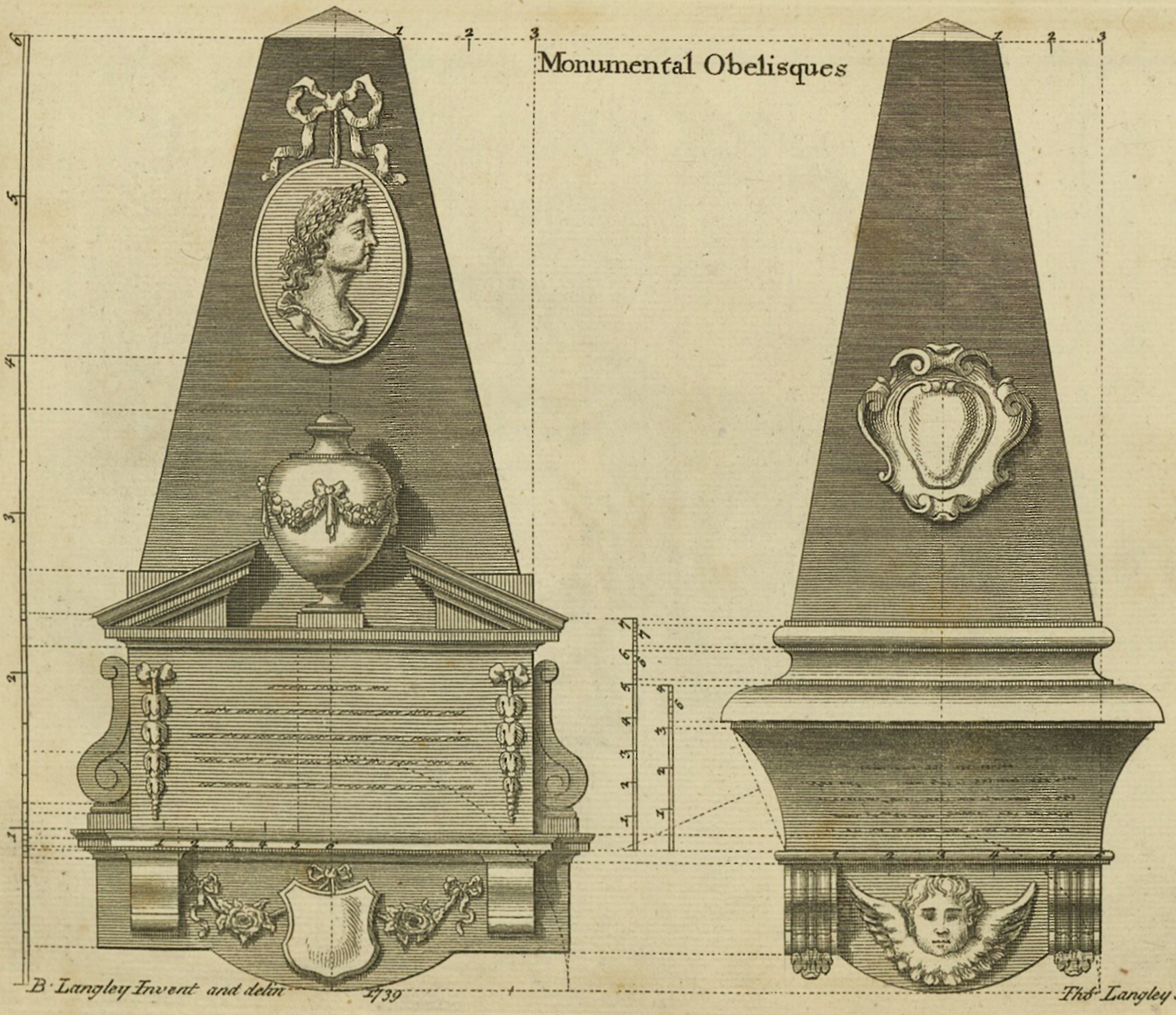
To find the Magnitude of a Monument to be fixed at any given Altitude above the Eye, that shall appear equal to a well proportioned Monument, viewed level with the Eye on the Ground.

Plate CXXXII.


i
e
A
l
d
25
8 Feet 3 Inches
B
h
m
f
4 Feet 3 Inches
C
c
20
g
15
x
x
n
b
10
D
5 Feet
z
z
k
a
5
r
q

Batty Langley Invent 1739 — *Thos. Langley Sculp.*

Monumental Obelisques

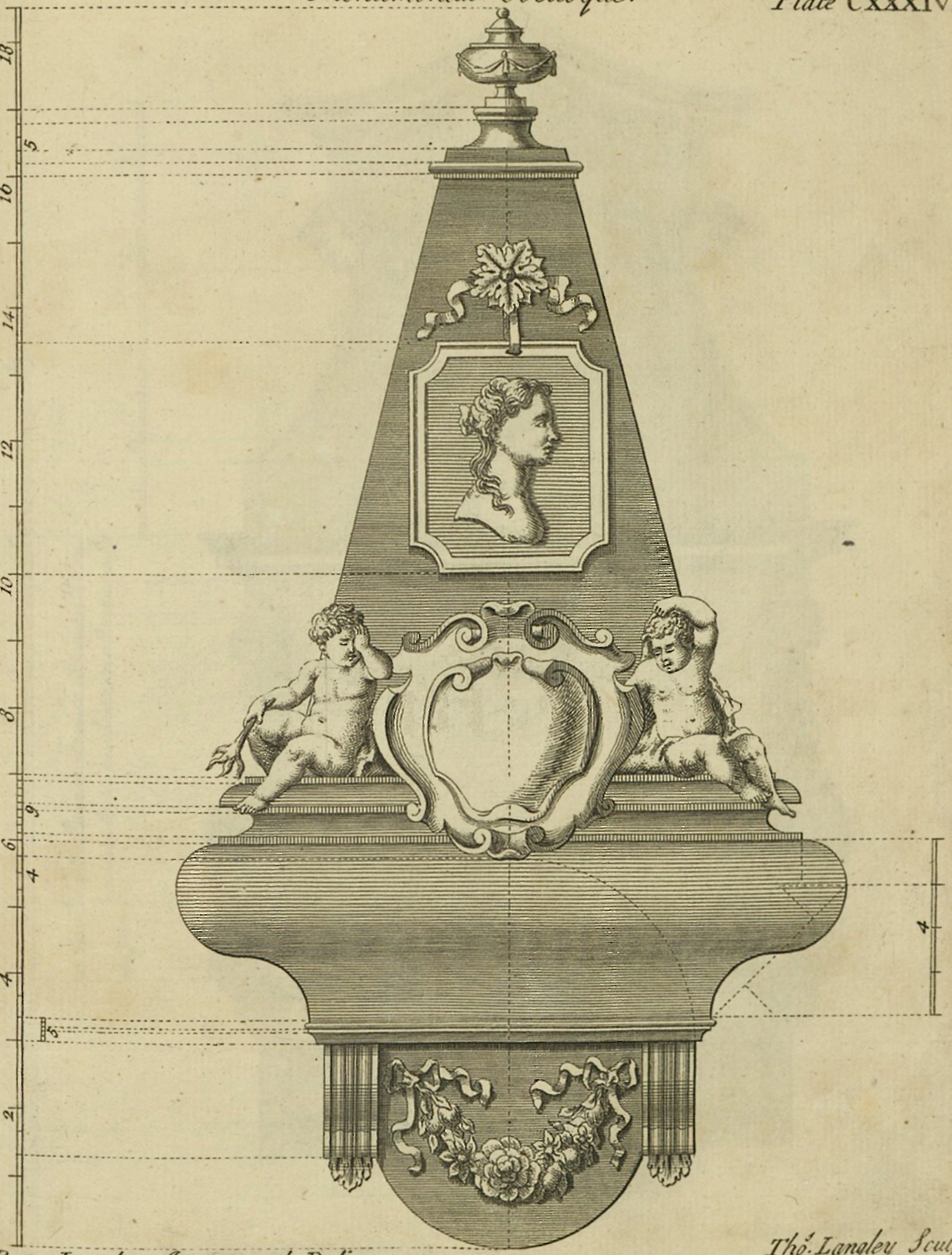

1
2
3
1
2
3
4
5
6
1
2
3
4
5
6
7
1
2
3
4
5
6
7
1
2
3
4
5
6

B. Langley Invent and delin 1739

Thos Langley Sculp.

Monumental Obelisque.

Plate CXXXIV.

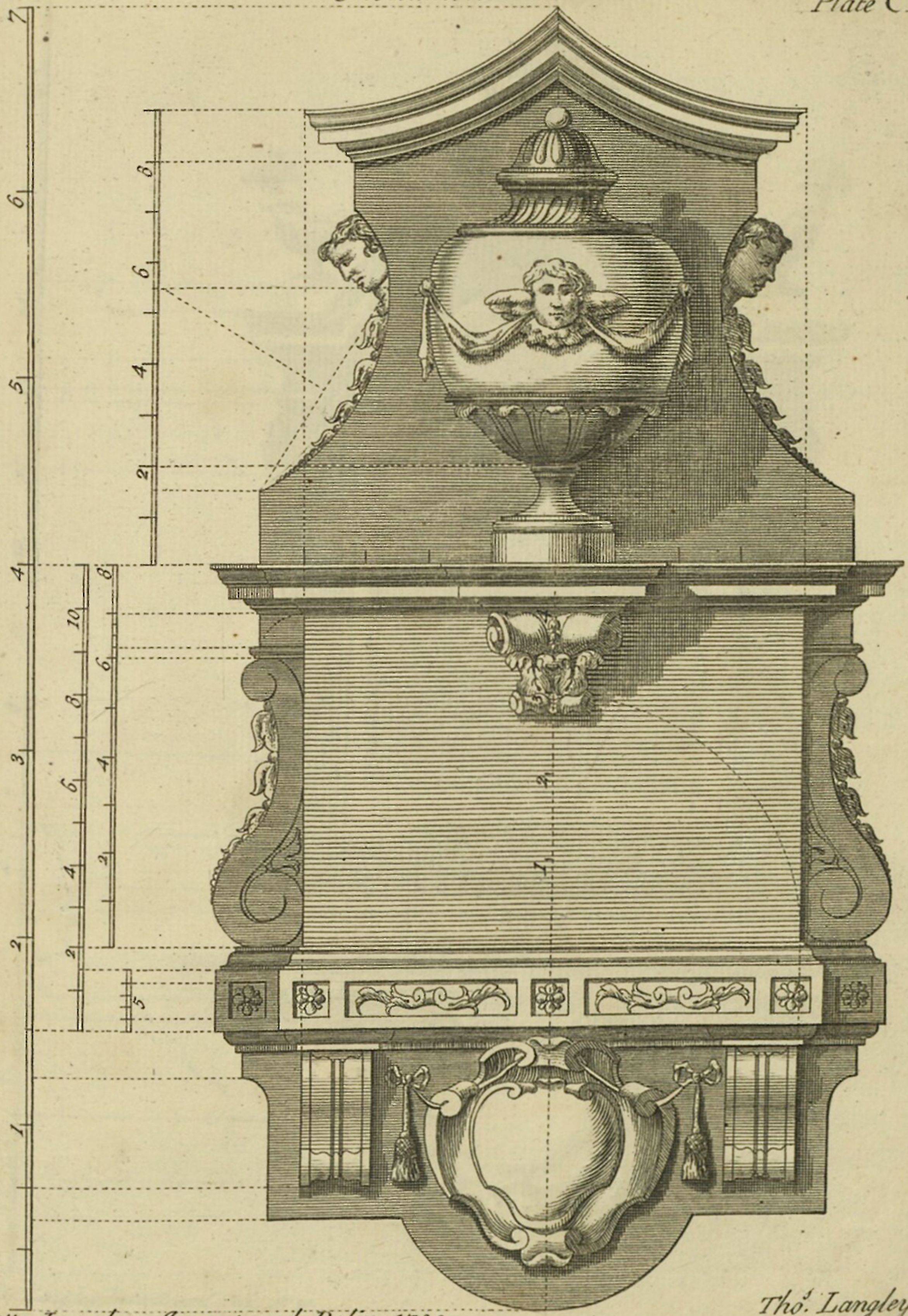

18
5
16
14
12
10
8
9
6
4
4
4
5
2

Batty Langley Invent and Delin. 1739.

Thoˢ. Langley Sculp.

Monument.

Plate CXXXV.



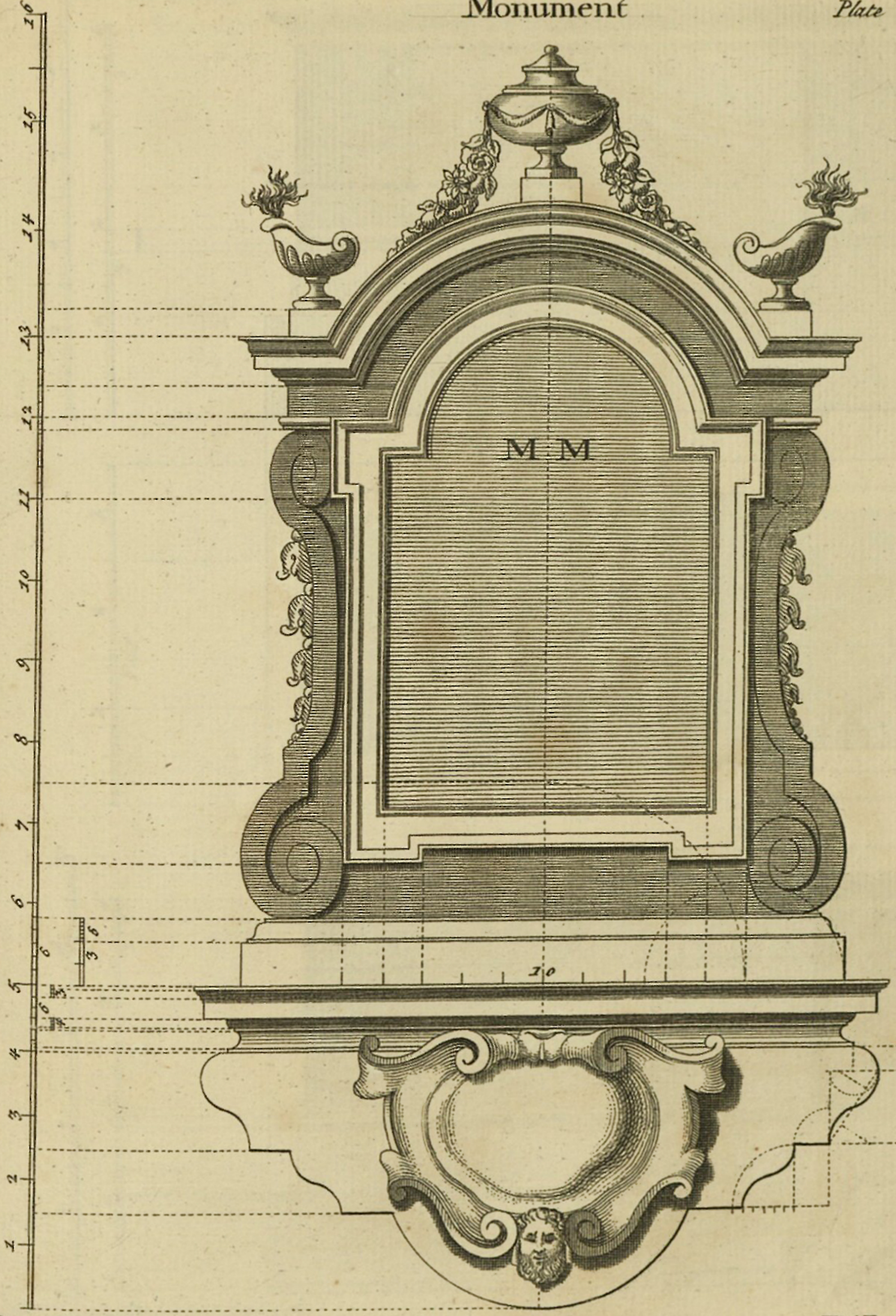
7
6
5
4
3
2
1
8
6
4
2
8
6
4
2
10
8
6
4
2
5
2
1

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp.

Monument

Plate CXXXVI

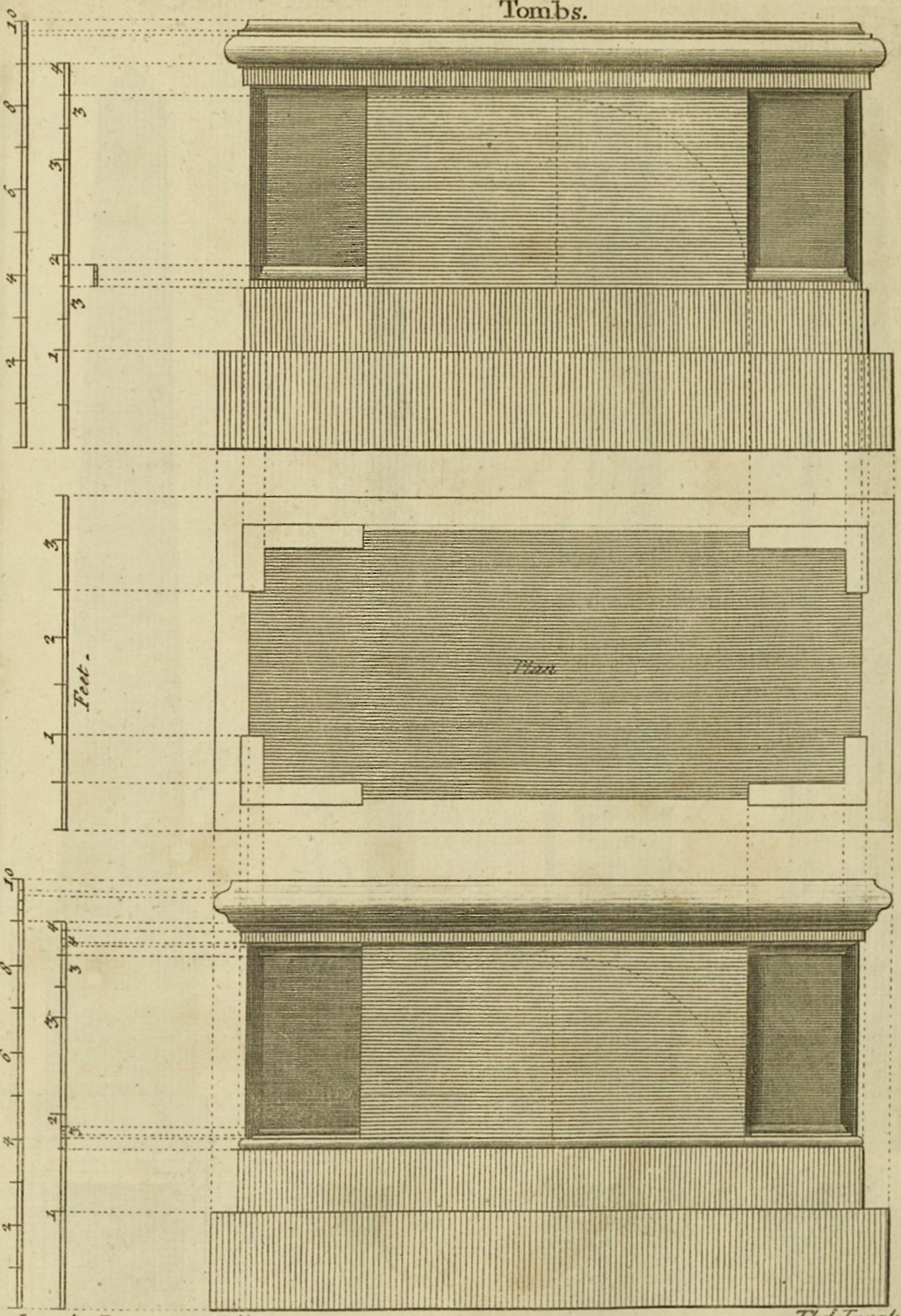

16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
M M
10
6
3 6
4

Batty Langley Invent and delin 1739.

Thos. Langley Sculp.

Tombs.

Plate
CXXXVII

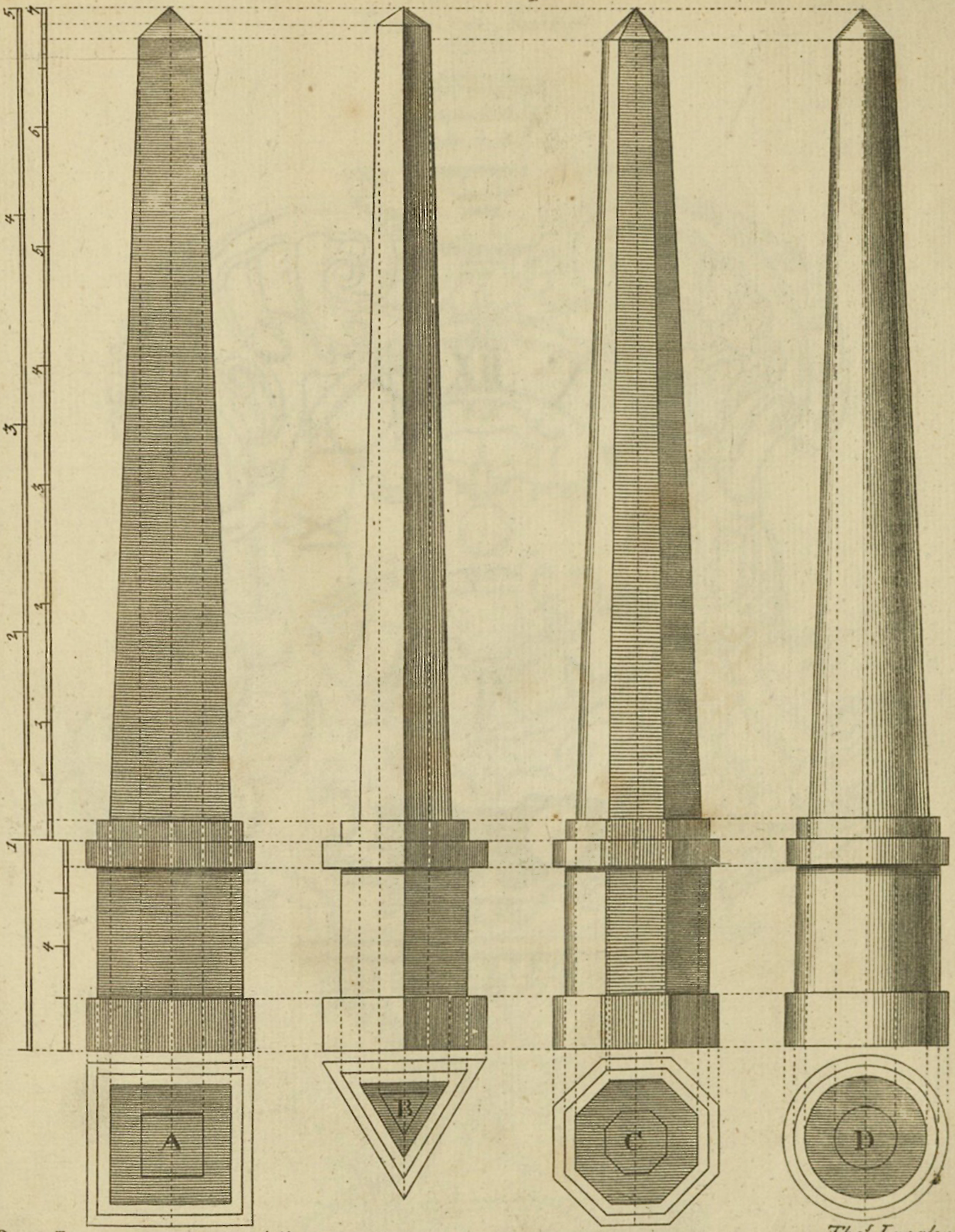


10
8
6
4
2
4
3
3
2
3
1
3
2
Feet.
1
Plan
10
8
6
4
2
4
3
3
2
3
1

Batty Langley Invent and delin *Thoˢ Langley Sculp*

Obelisques

Plate. CXXXVIII

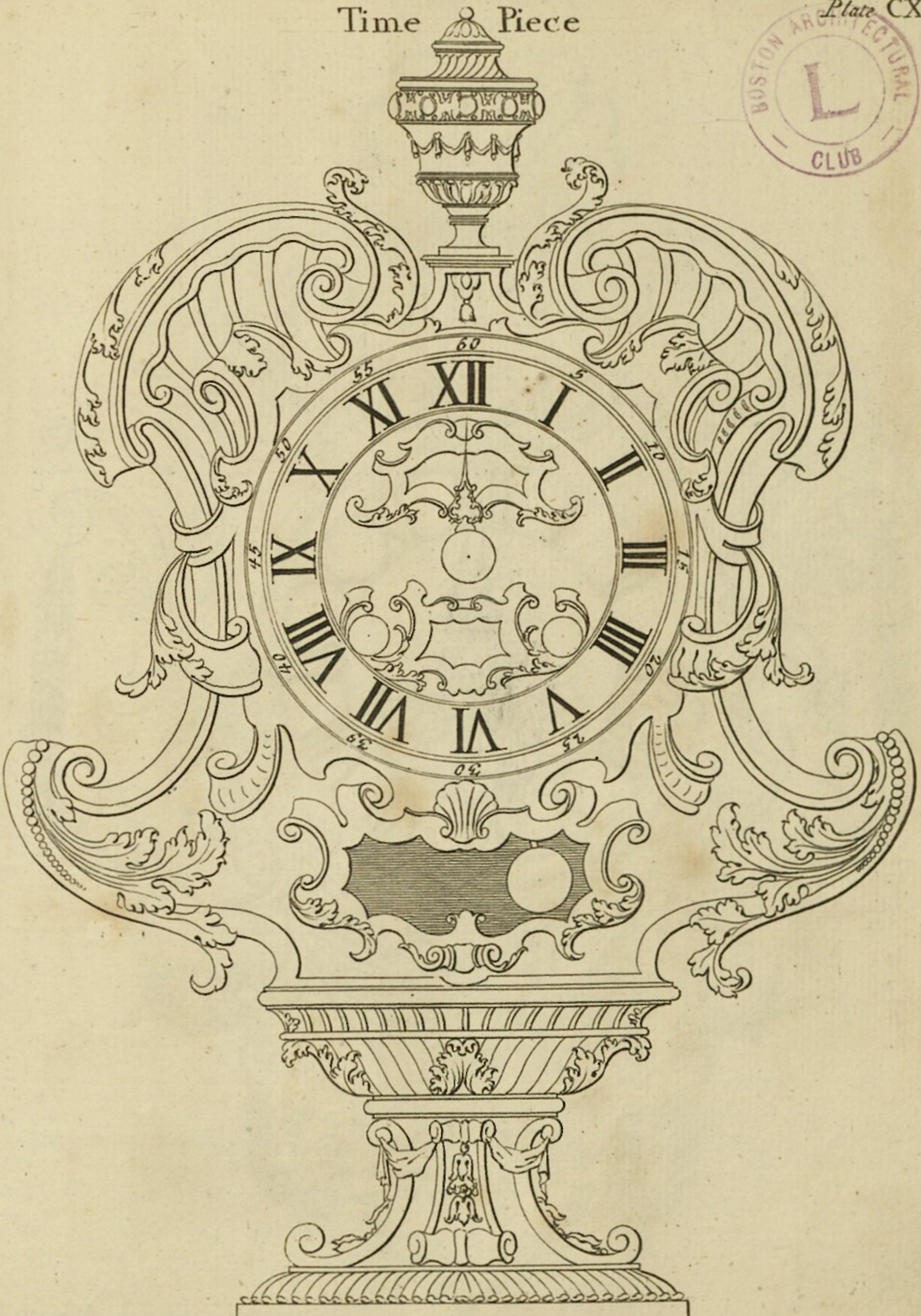


Batty Langley Invent and delin

Thoˢ Langley Sculp

BOSTON ARCHITECTURAL L CLUB

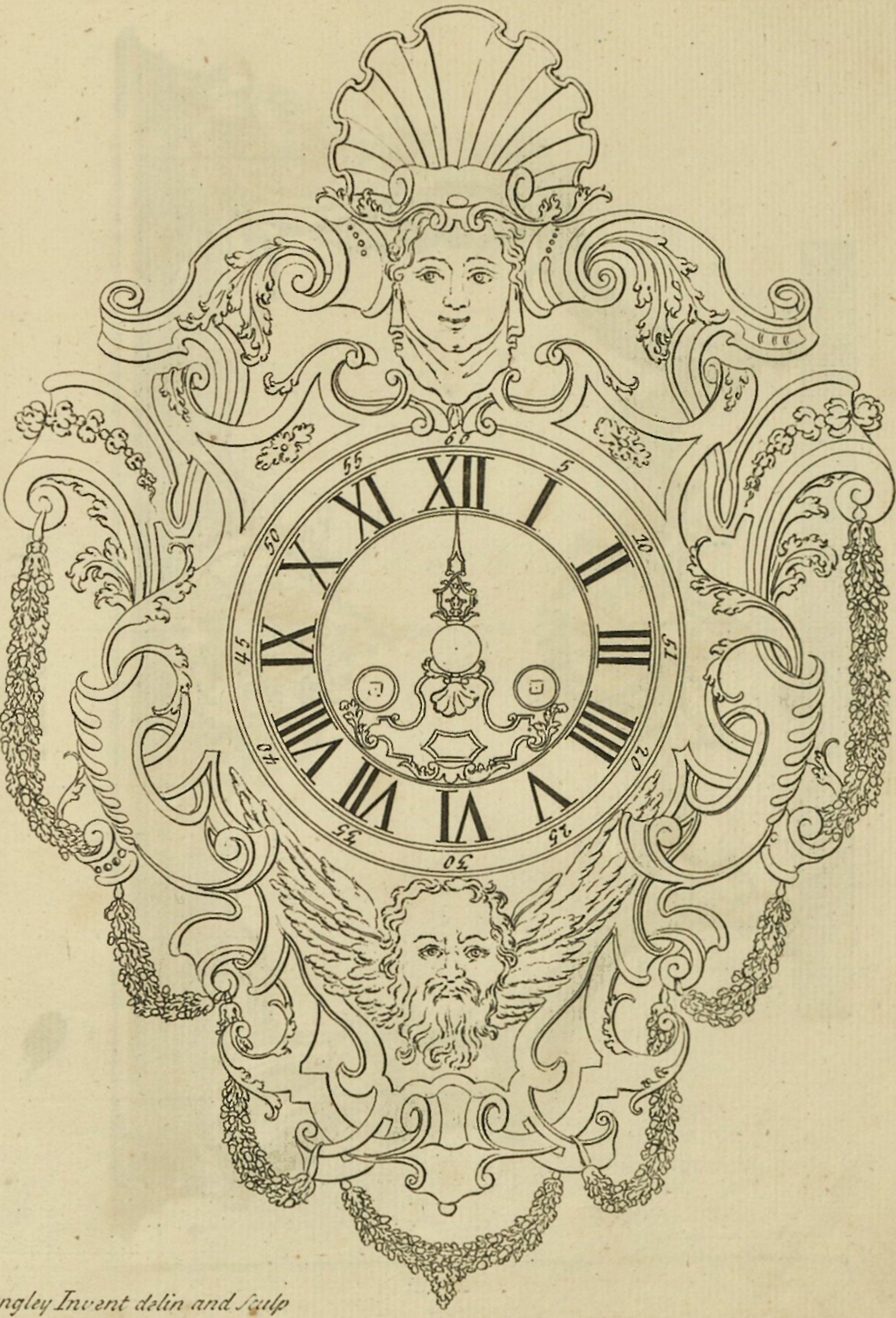
Time Piece


60
5
10
15
20
25
30
35
40
45
50
55
XII
I
II
III
IIII
V
VI
VII
VIII
IX
X
XI

Tho' Langley Invent and Sculp

Time Piece

Plate CXL

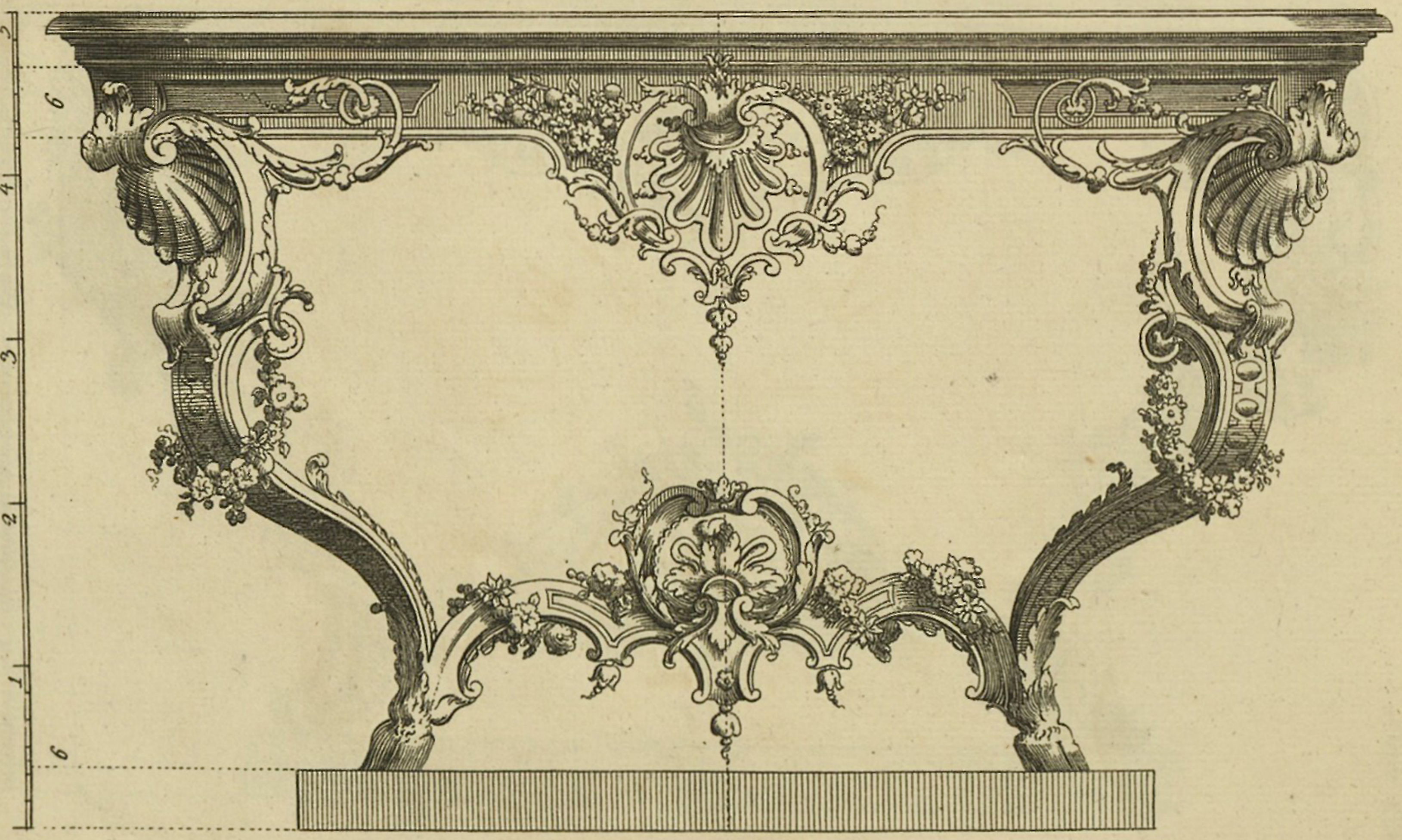


60
5
10
15
20
25
30
35
40
45
50
55
XII
I
II
III
IIII
V
VI
VII
VIII
IX
X
XI

Thoˢ Langley Invent delin and Sculp

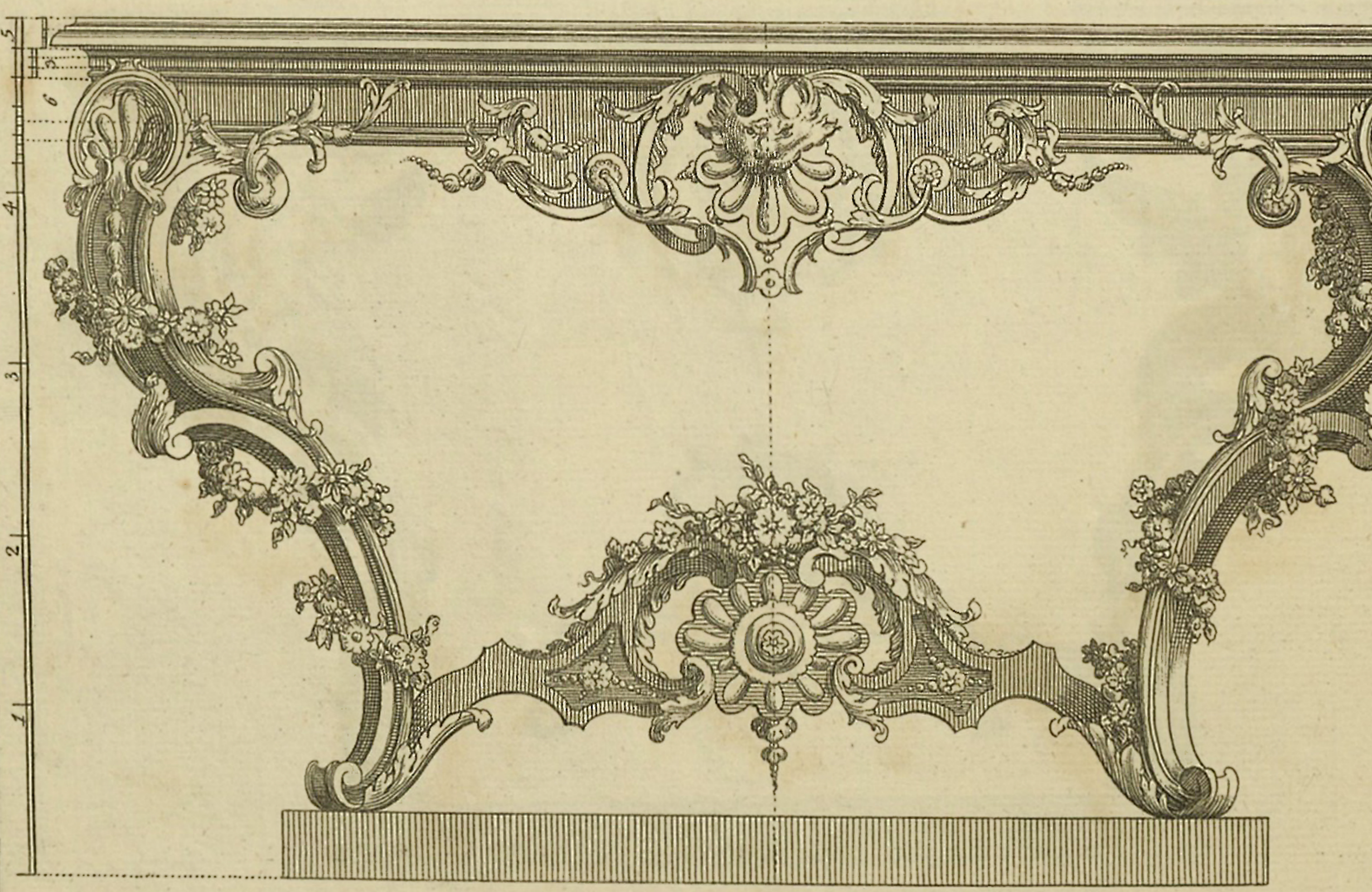
Plate CXLI

Marble Table



Tho.s Langley Invent Delin and Sculp. 1739

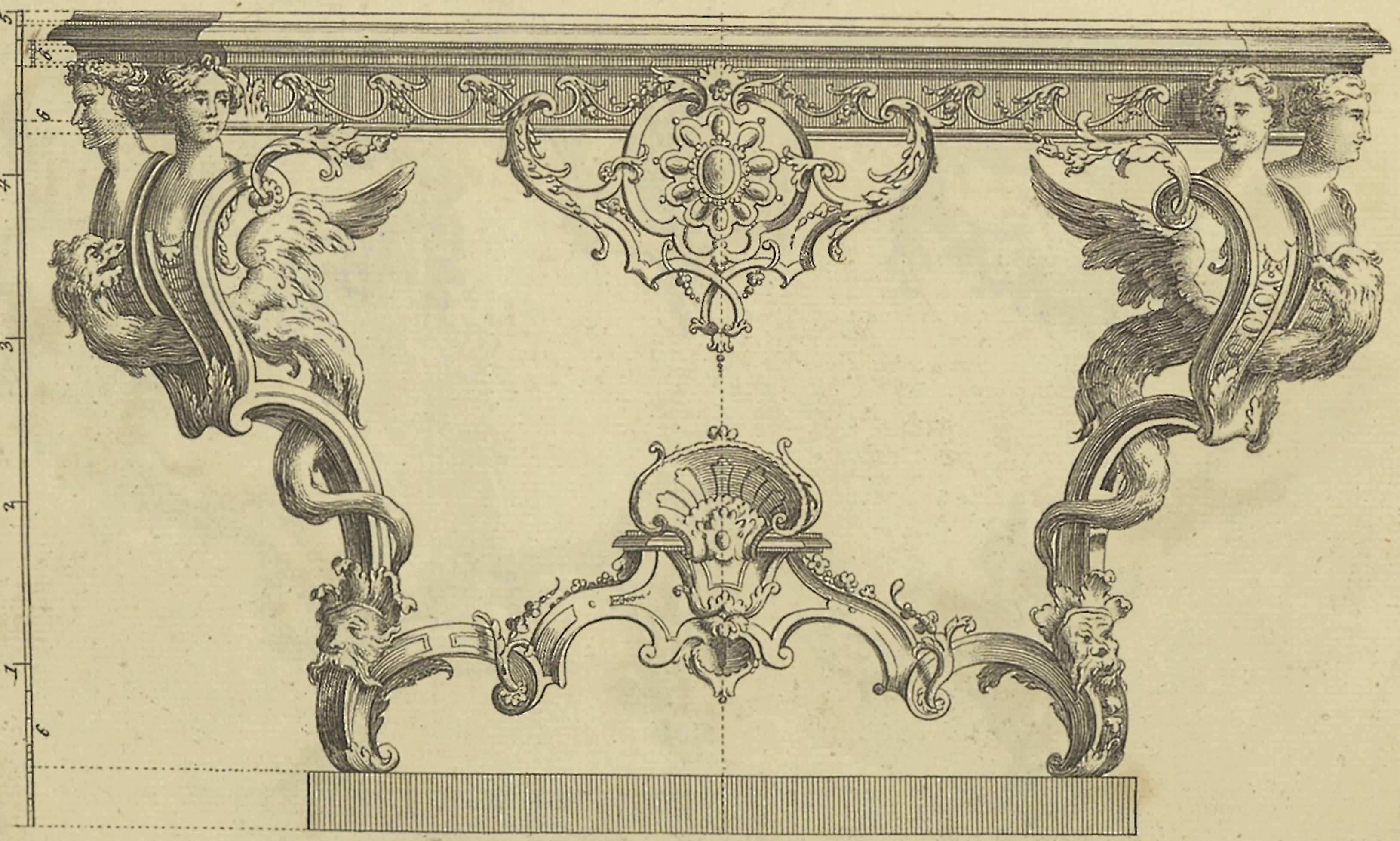
Marble Table



Tho:ˢ Langley Invent Delin and Sculp. 1739

Plate CXLIII

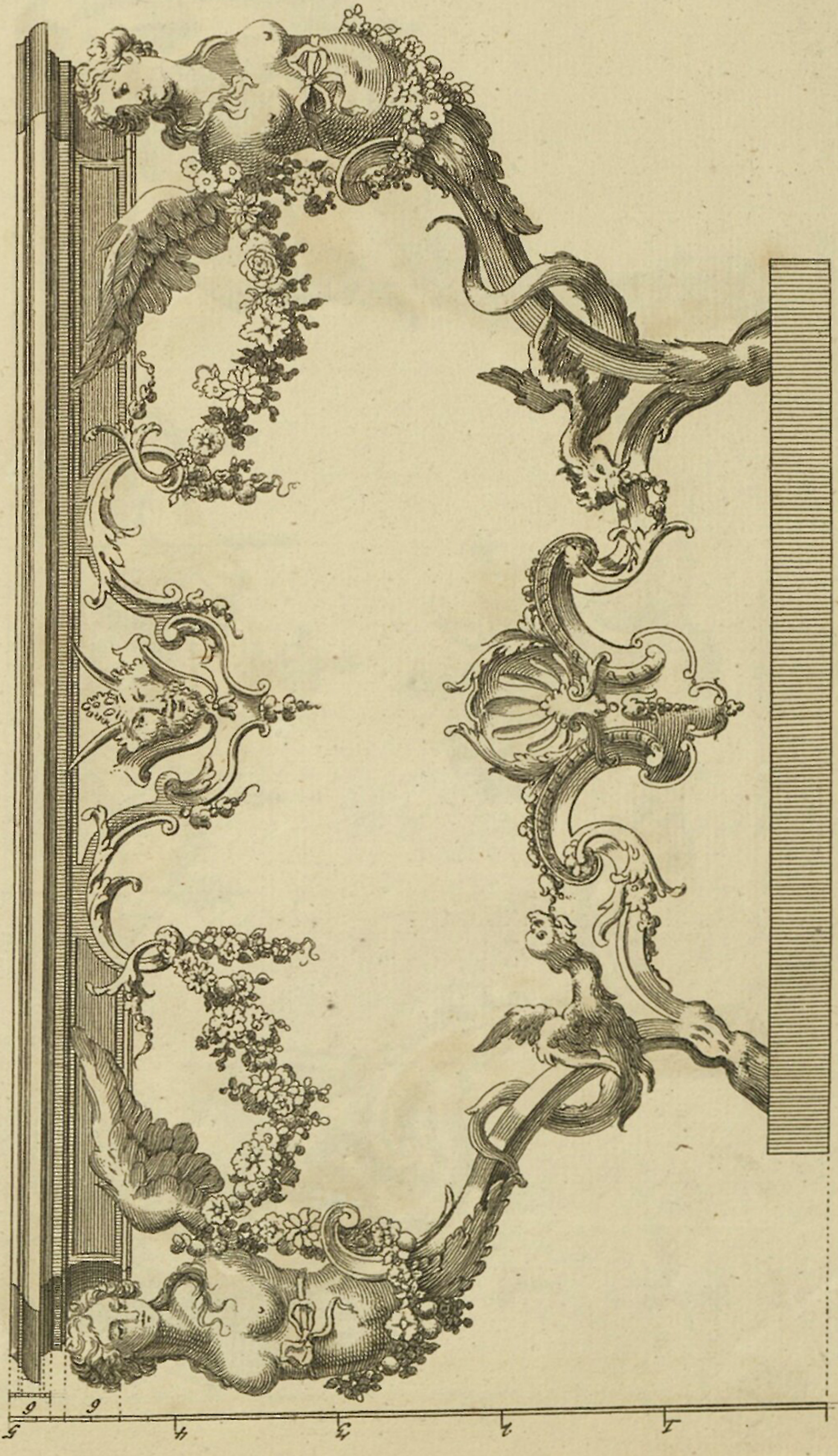
Marble Table



Thoˢ Langley Invent delin and Sculp 1739

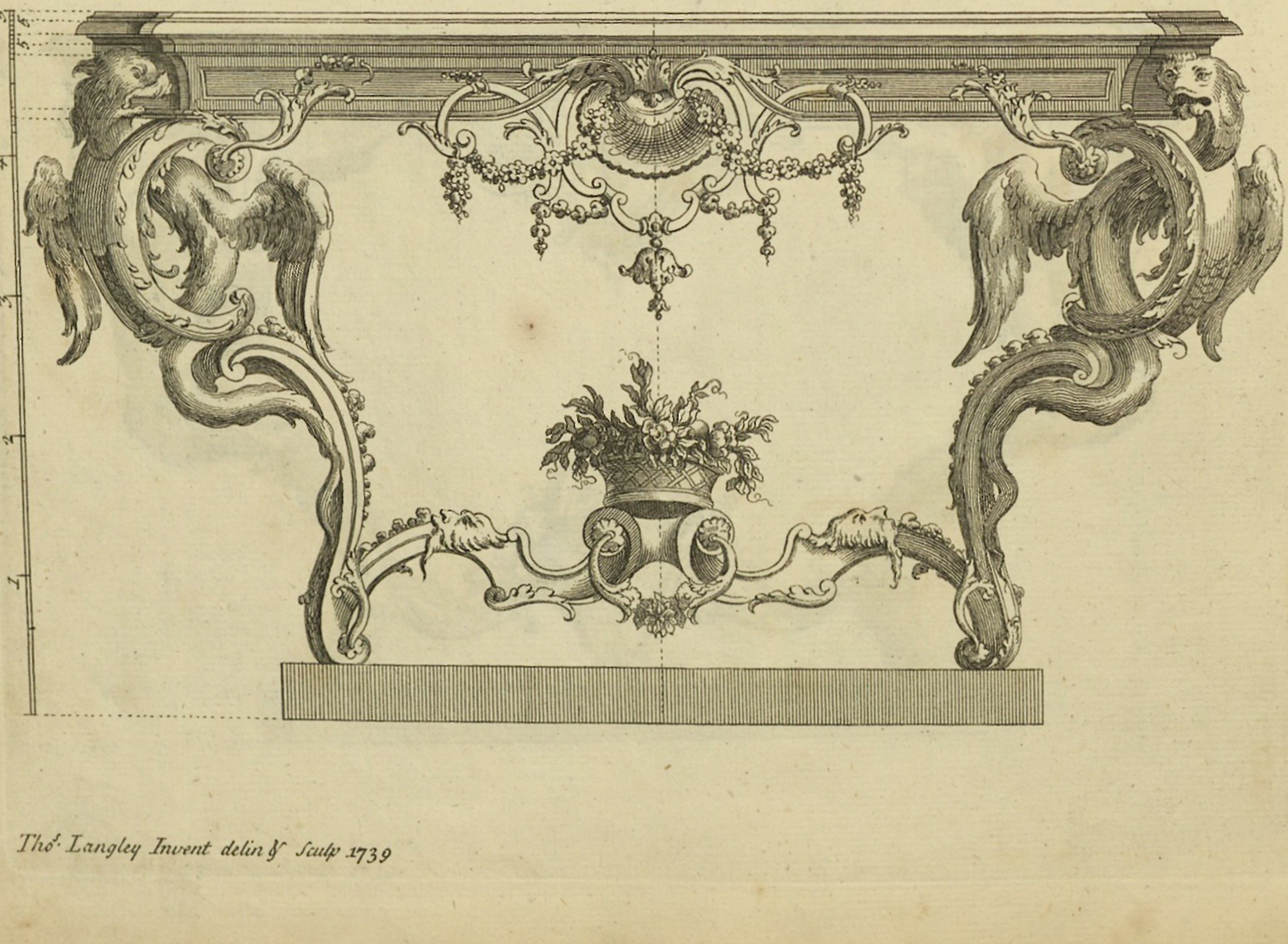
Plate **CXLIIII**

Marble Table



Thoˢ Langley Invent delin and Sculp 1739

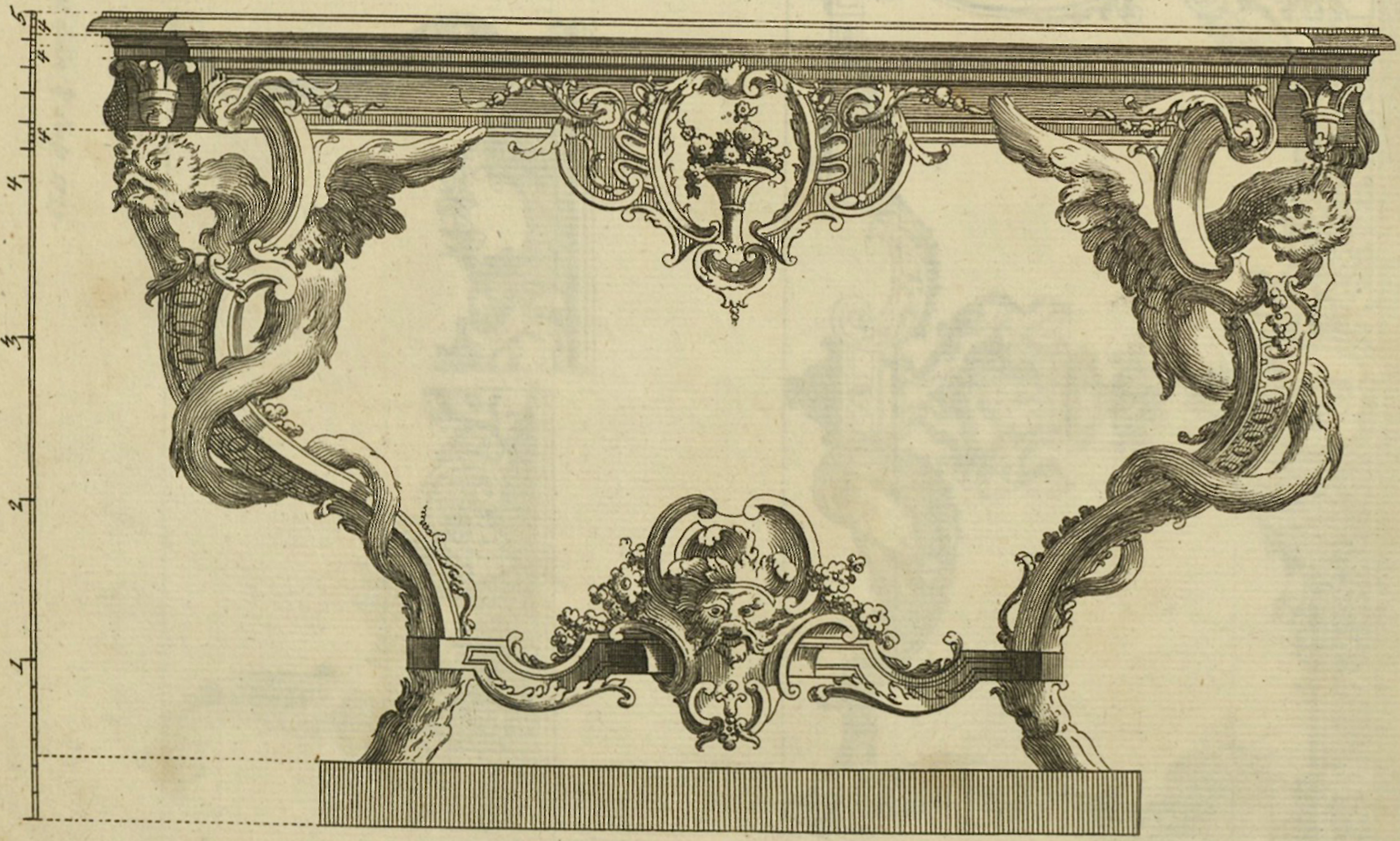
Marble Table



Thoˢ. Langley Invent delin & Sculp 1739

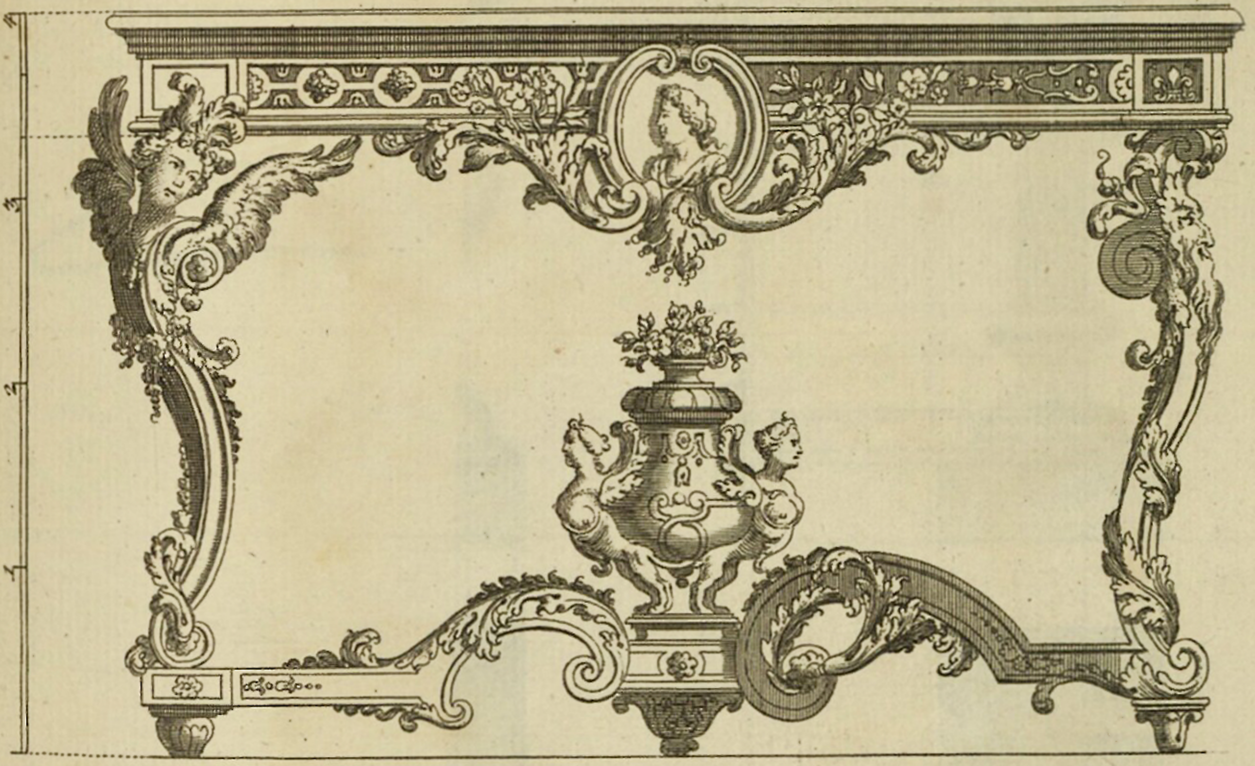
Marble Table

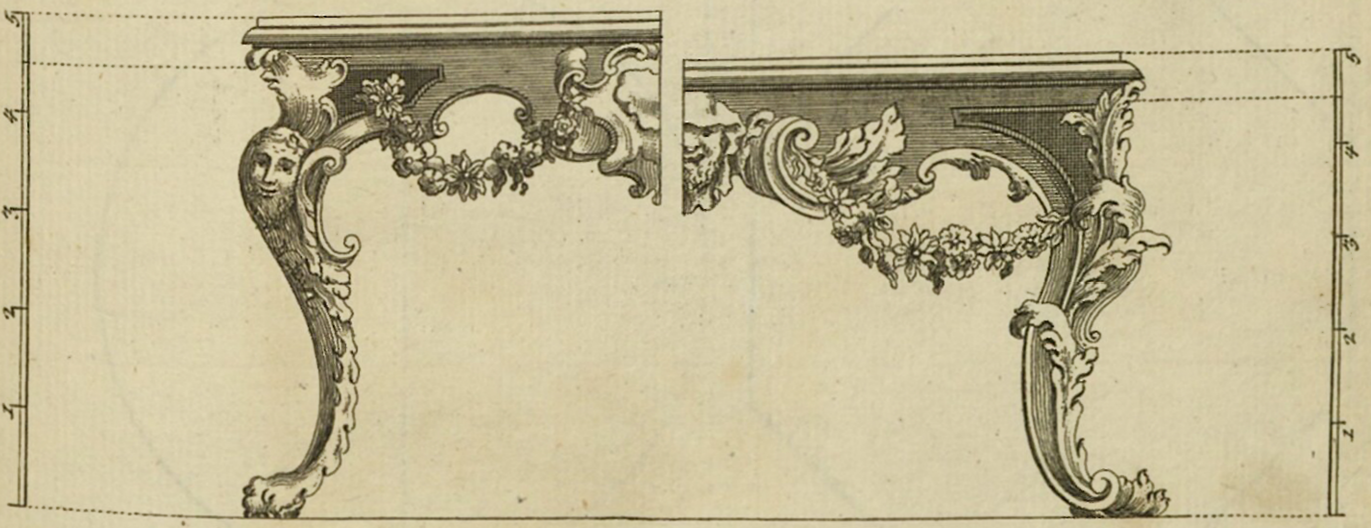
Plate CXLVI



Thoˢ Langley Invent delin and Sculp 1739

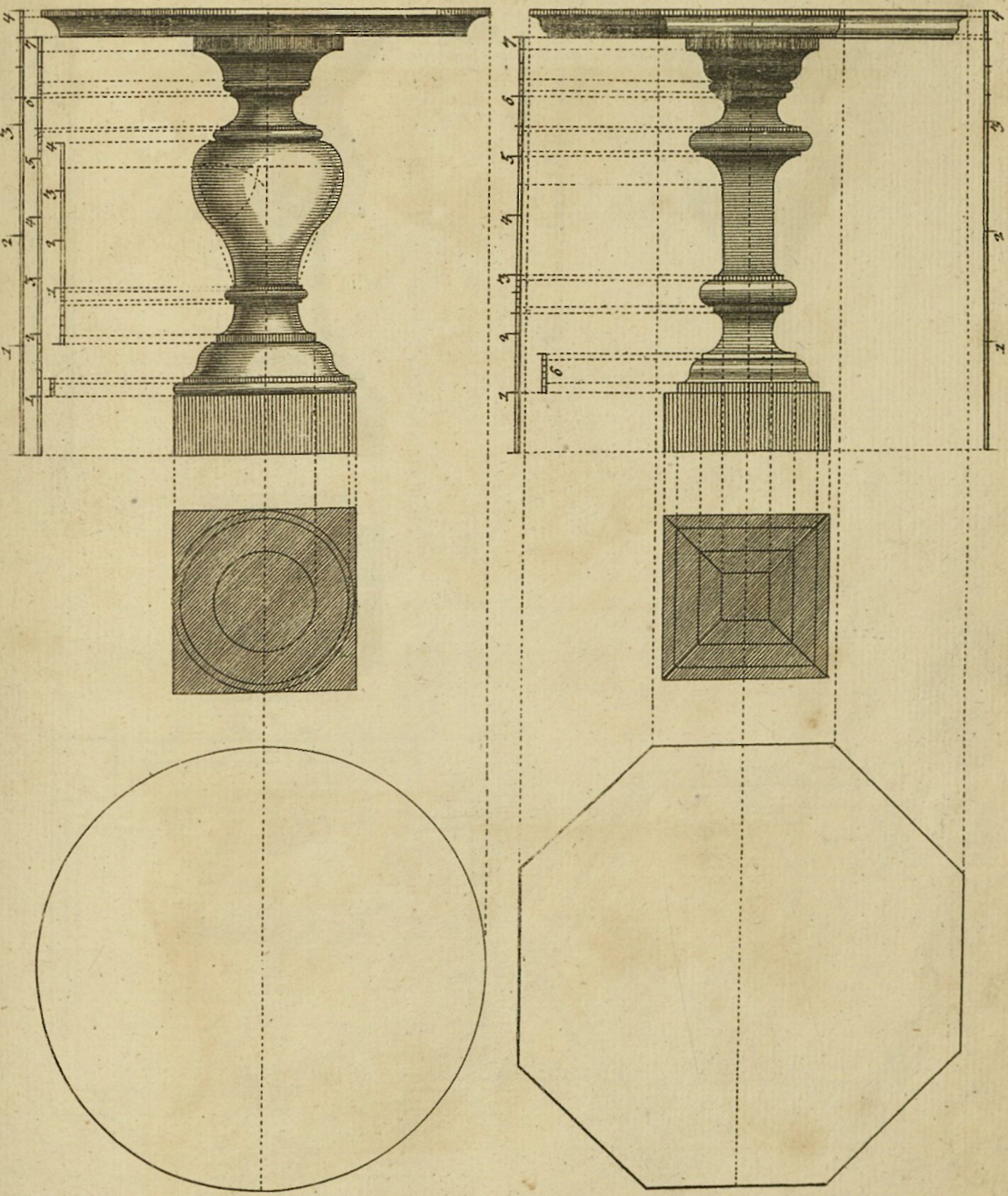
Table Frames.




1
2
3
4
5
1
2
3
4
5

Thō Langley Invent delin & Sculp 1739,

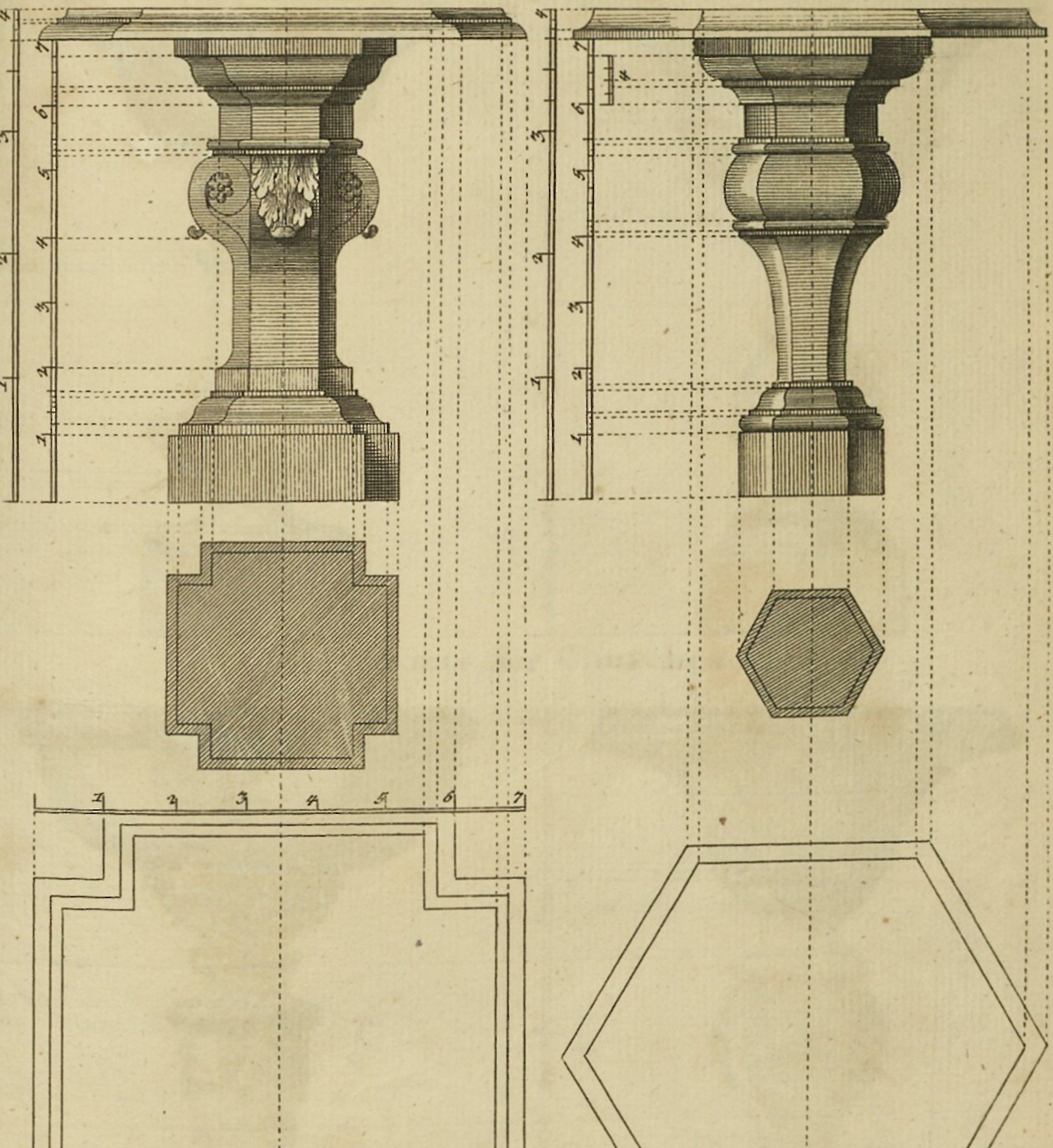
Marble Tables for Grotto's &c. *Plate* CXLVIII



Batty Langley Invent 1739 *Thoˢ Langley Sculp.*

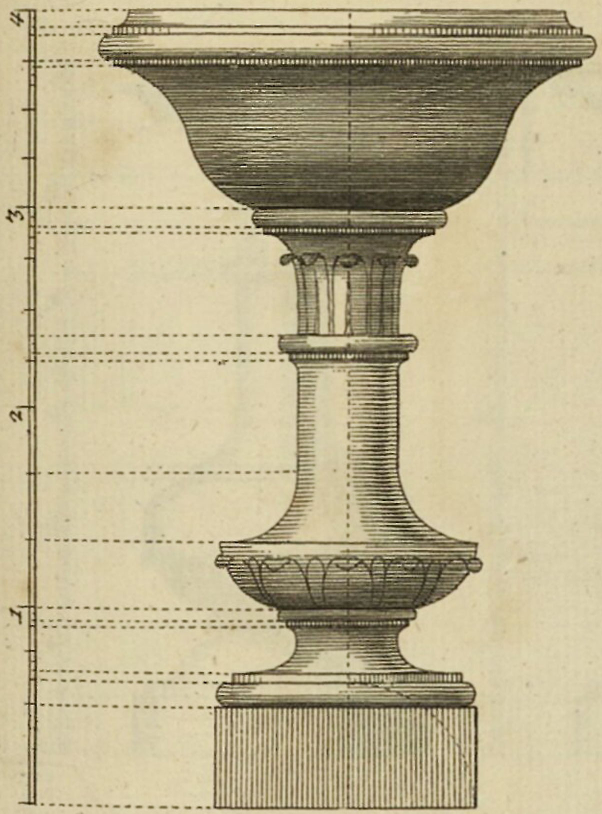
Stone Tables for Gardens &c

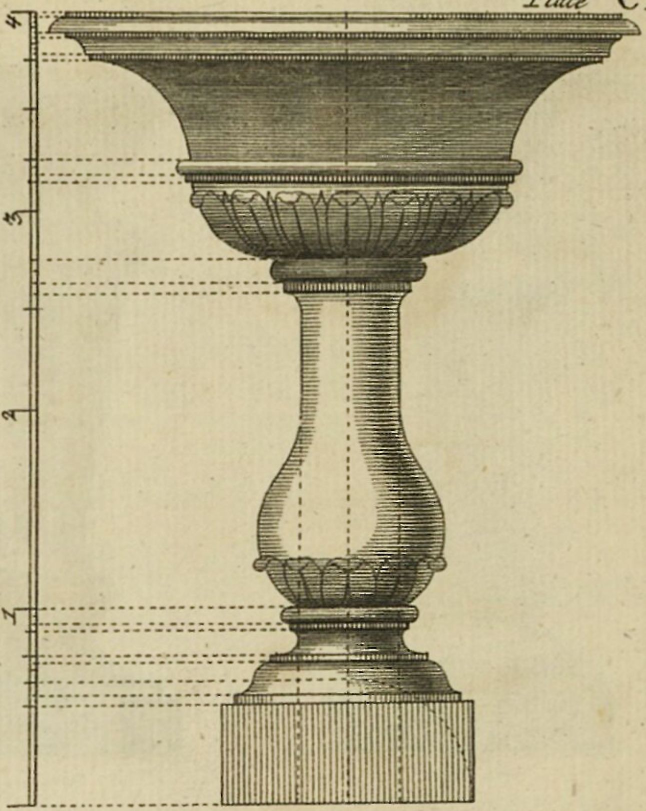
Plate CXLIX



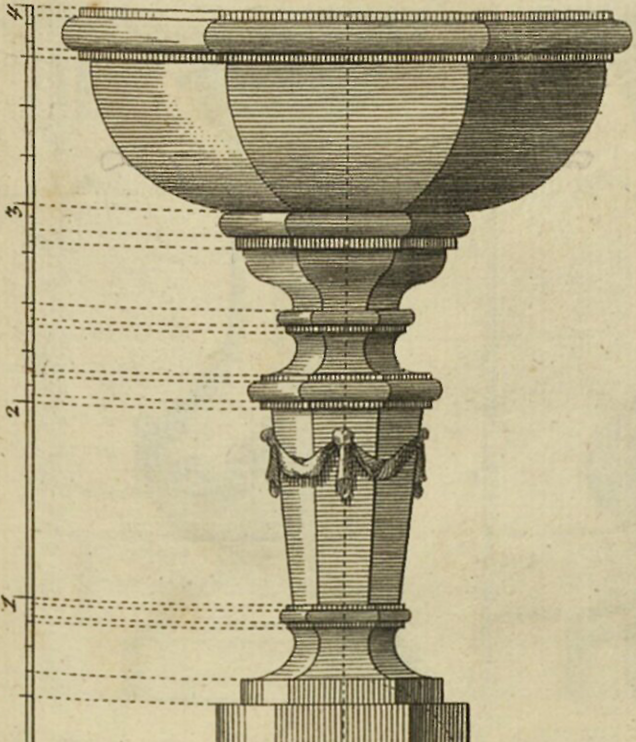
Batty Langley Invent & delin 1739

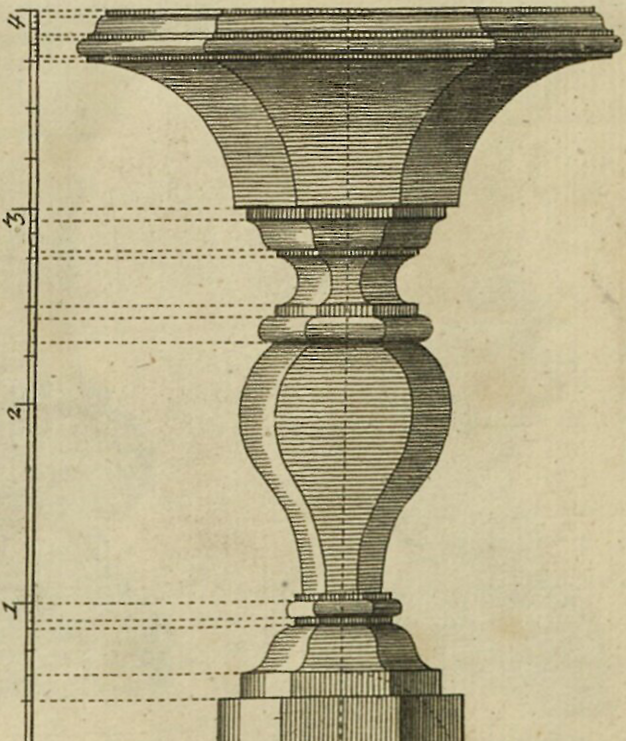
Thoˢ Langley Sculp





Fonts for Churches



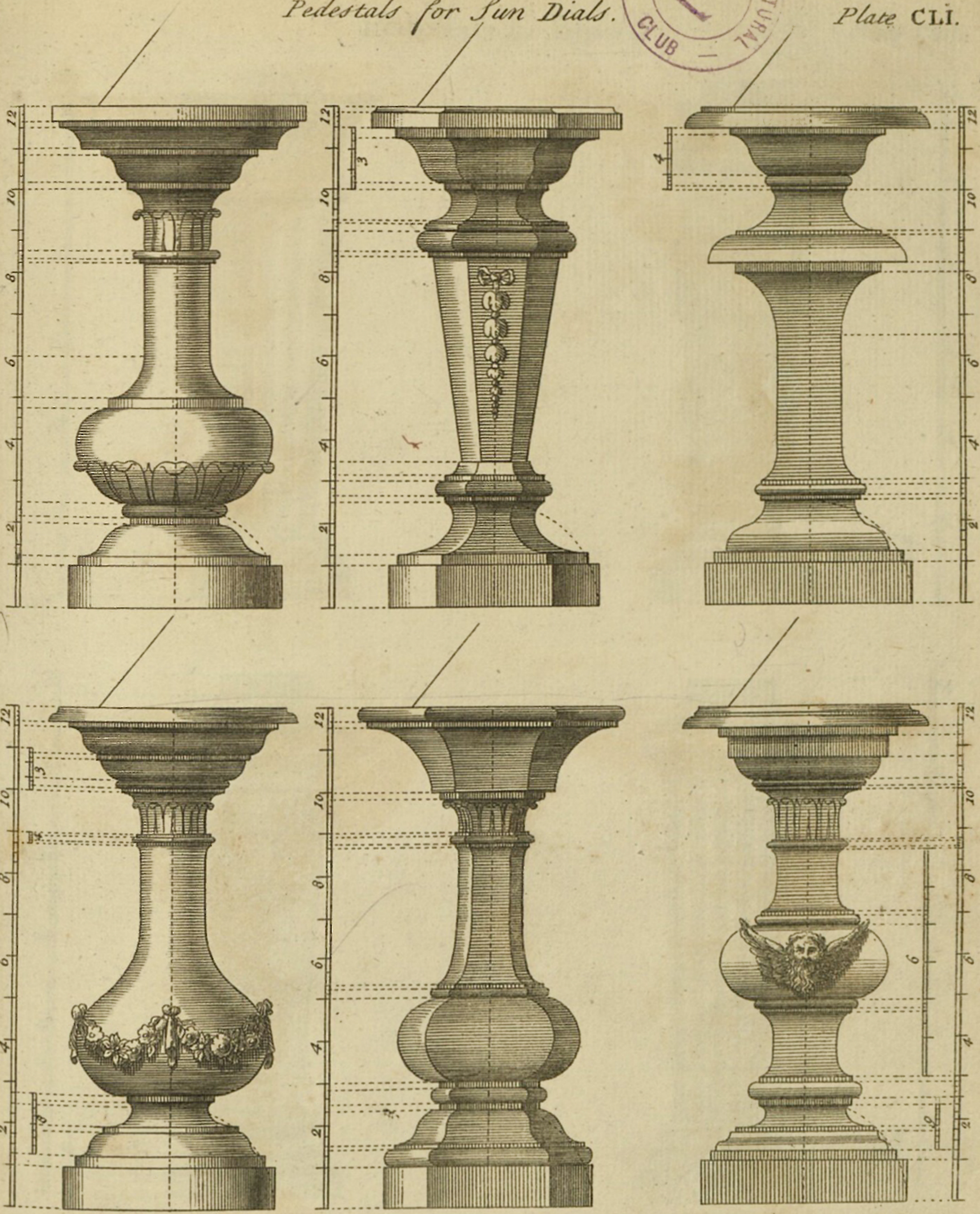


Batty Langley Invent & delin 1739

Thoˢ Langley Sculp

BOSTON ARCHITECTURAL CLUB
L

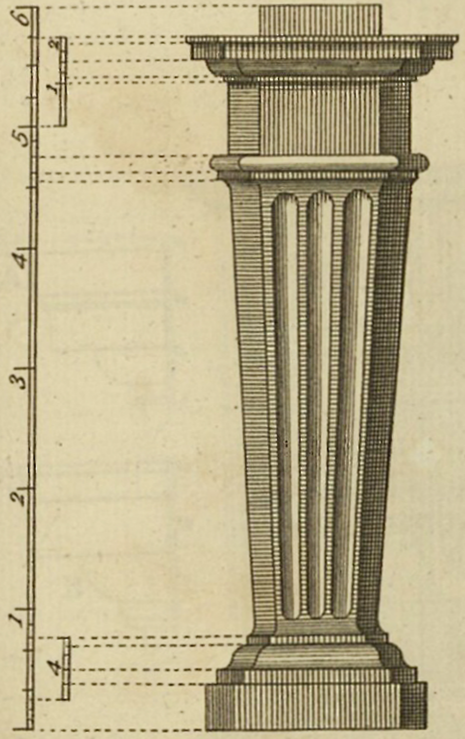
Pedestals for Sun Dials. Plate CLI.

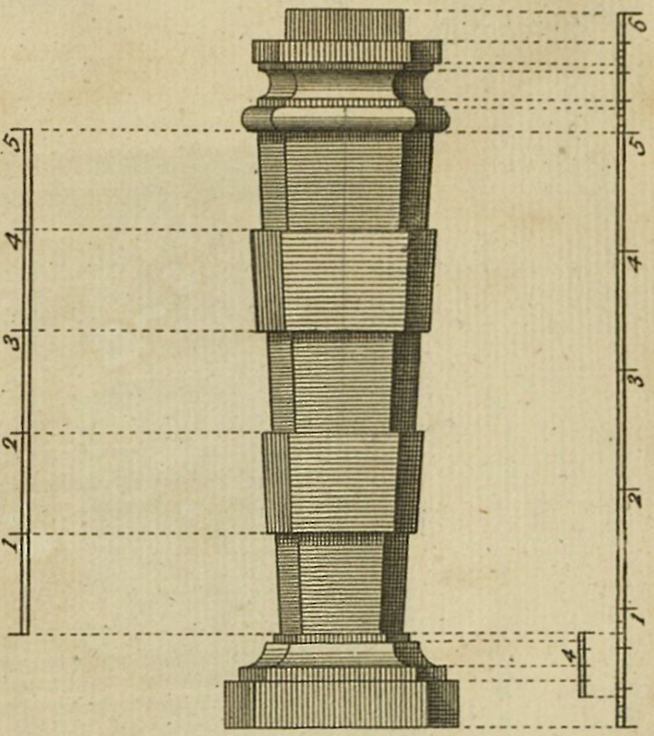

12
10
8
6
4
2
3
4
3
3
6
2

Batty Langley Invent and Delin. 1739. *Thoˢ. Langley Sculp.*

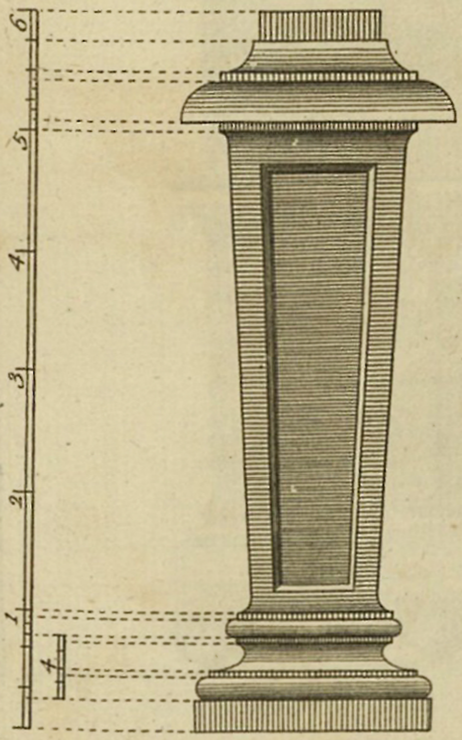
Pedeſtals *for* Buſto's

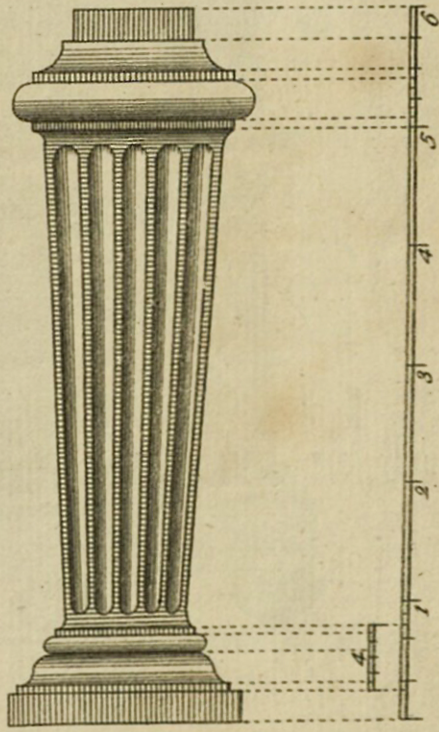
Plate CLII.




5
4
3
2
1
6
5
4
3
2
1
4

ARCHITECTURAL
LIBRARY
OF BOSTON



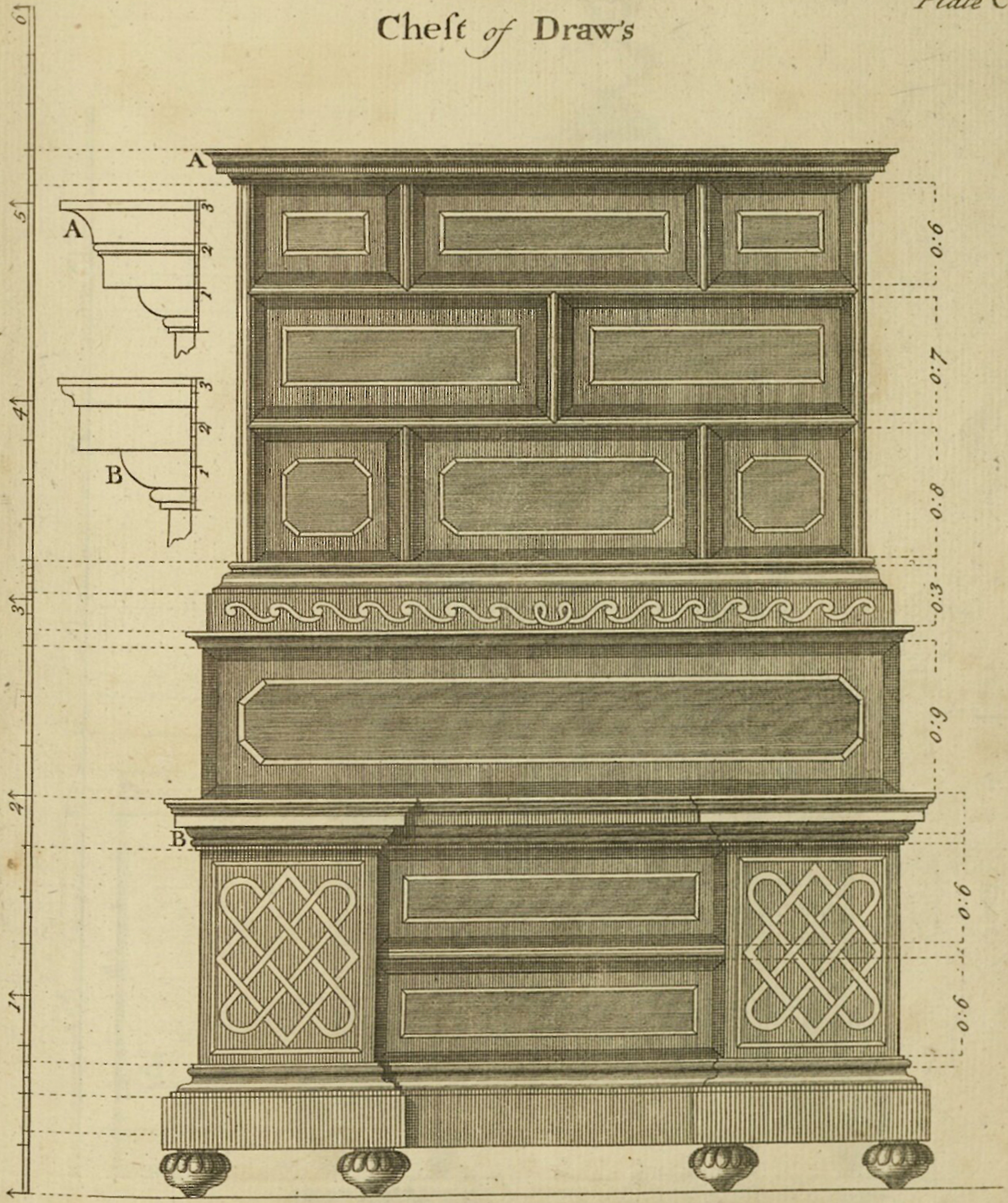


Batty Langley Invent and Delin. 1739.

Thoˢ Langley Sculp.

Plate CLIII.

Cheſt *of* Draw's

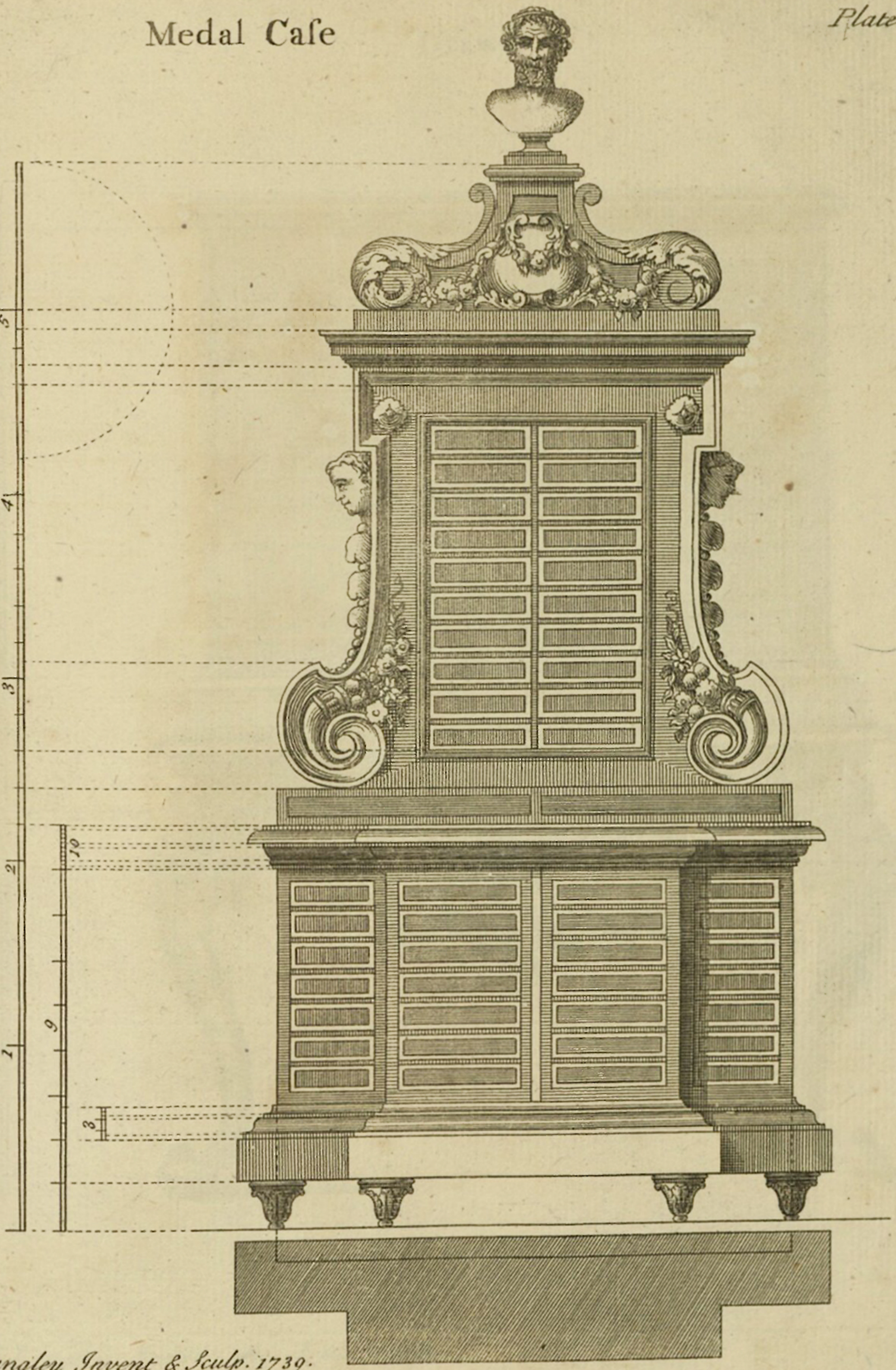

6
5
4
3
2
1
A
B
3
2
1
3
2
1
A
B
0:6
0:7
0:8
0:3
0:9
0:6
0:6

Batty Langley Invent and Delin. 1739.

Thos. Langley Sculp:

Medal Caſe

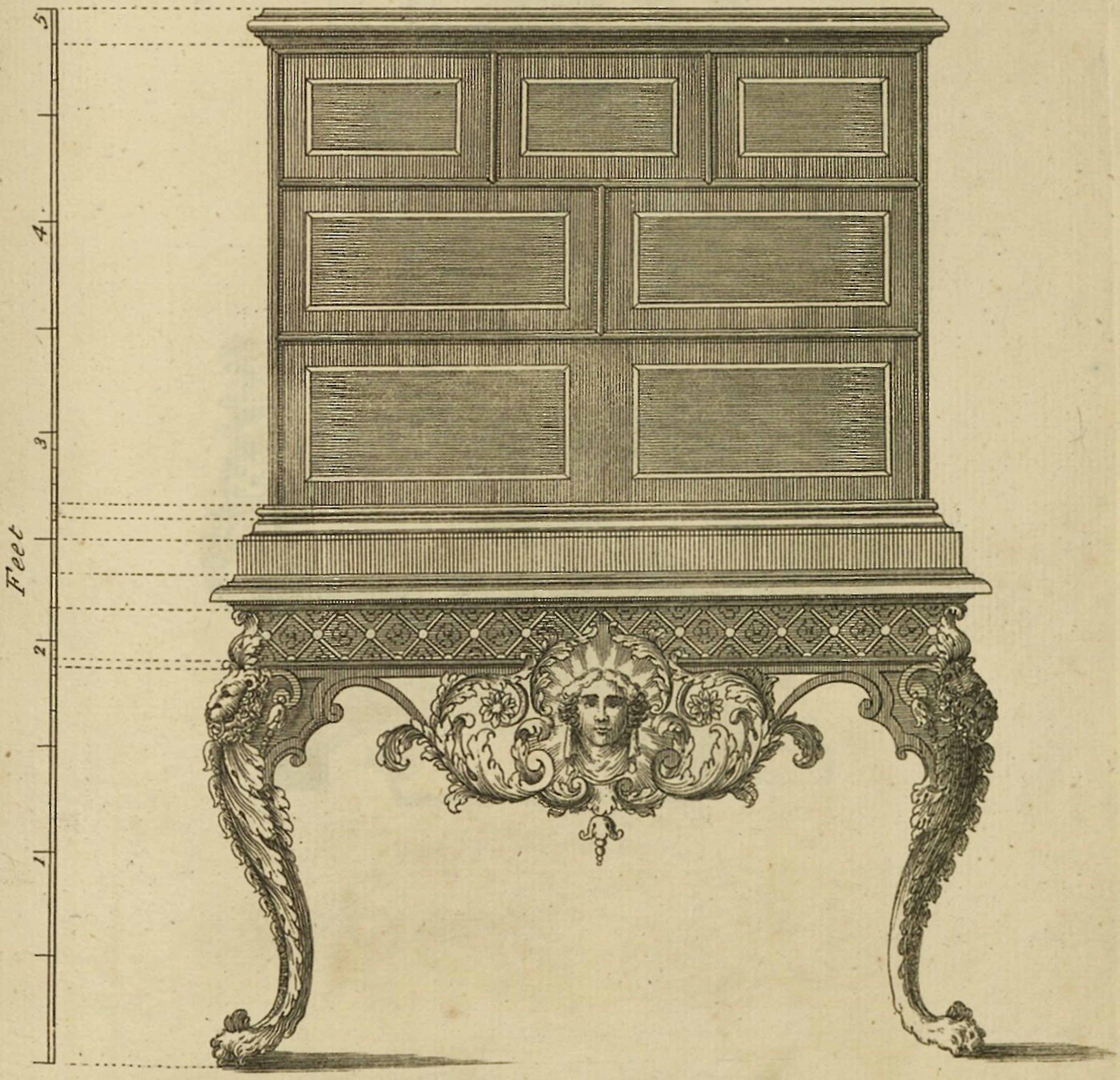
Plate CLIV.



T. Langley Invent & Sculp. 1739.

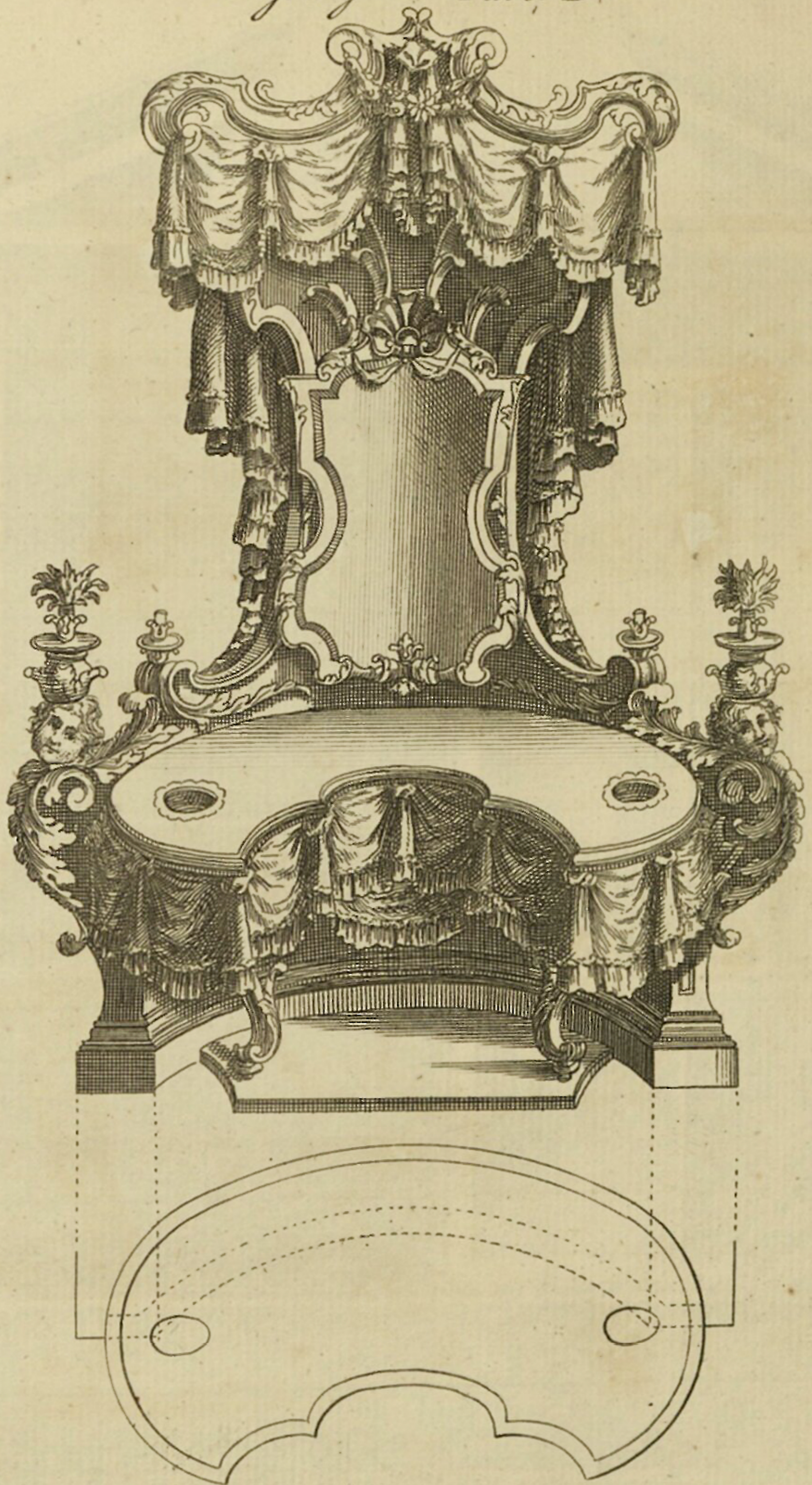
Draw's

Plate CLV.



Thoˢ Langley Invent and Sculp. 1739.

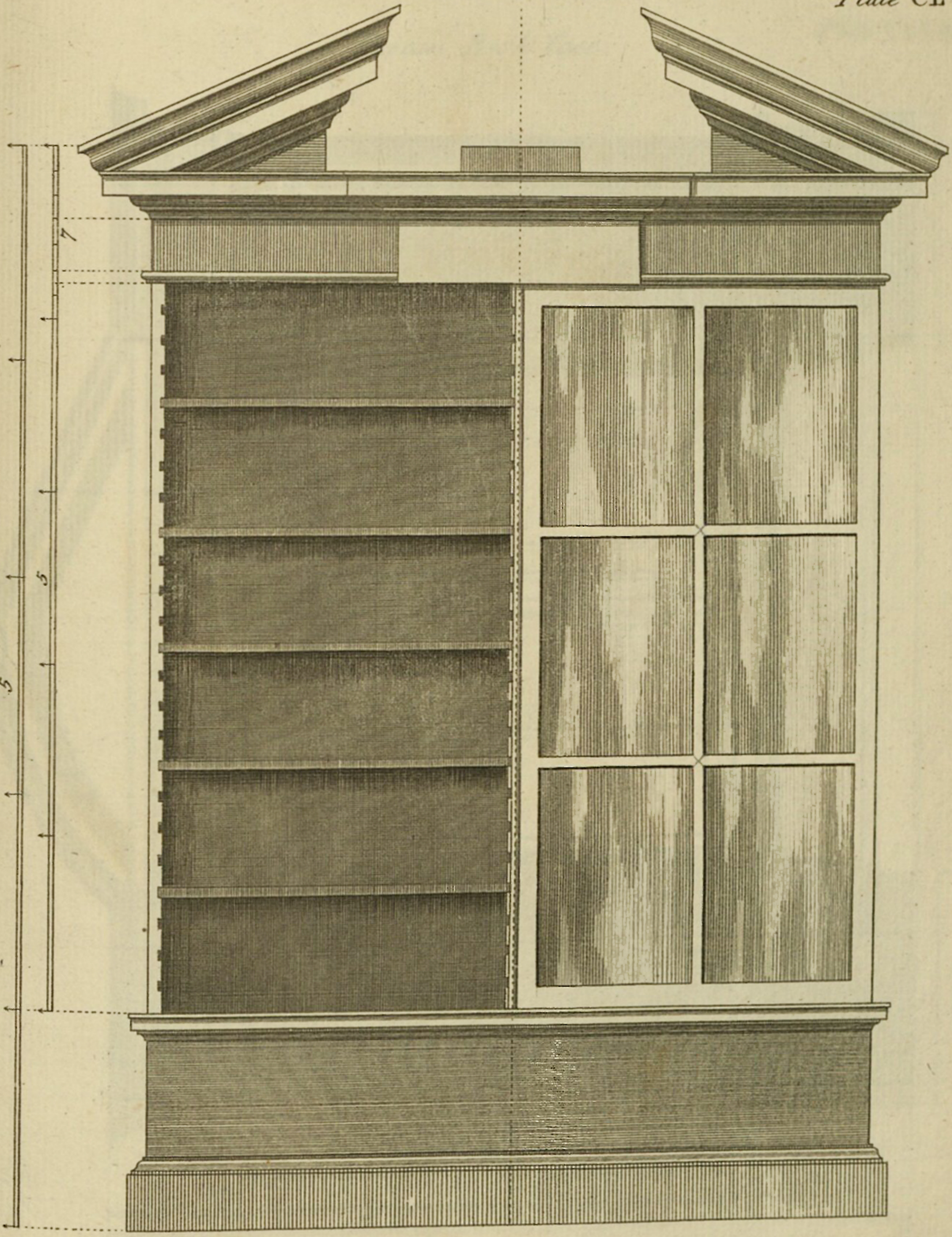
Dreſsing — Table —



T. Langley Sculp.

Tuscan Book Case.

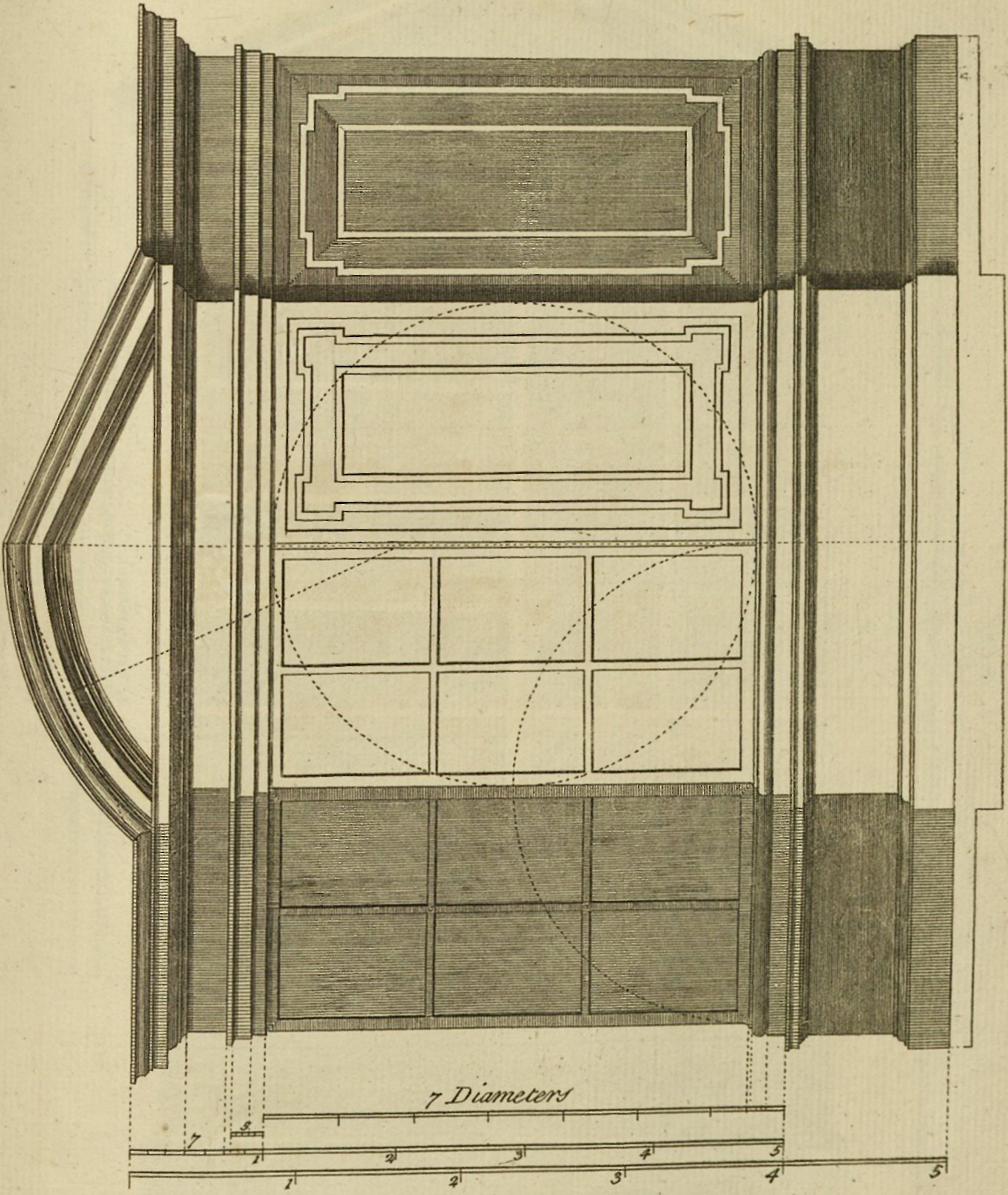
Plate CLVII.



Batty Langley Invent 1739.

Thoᵒ. Langley Sculp.

Tuscan Book Case.

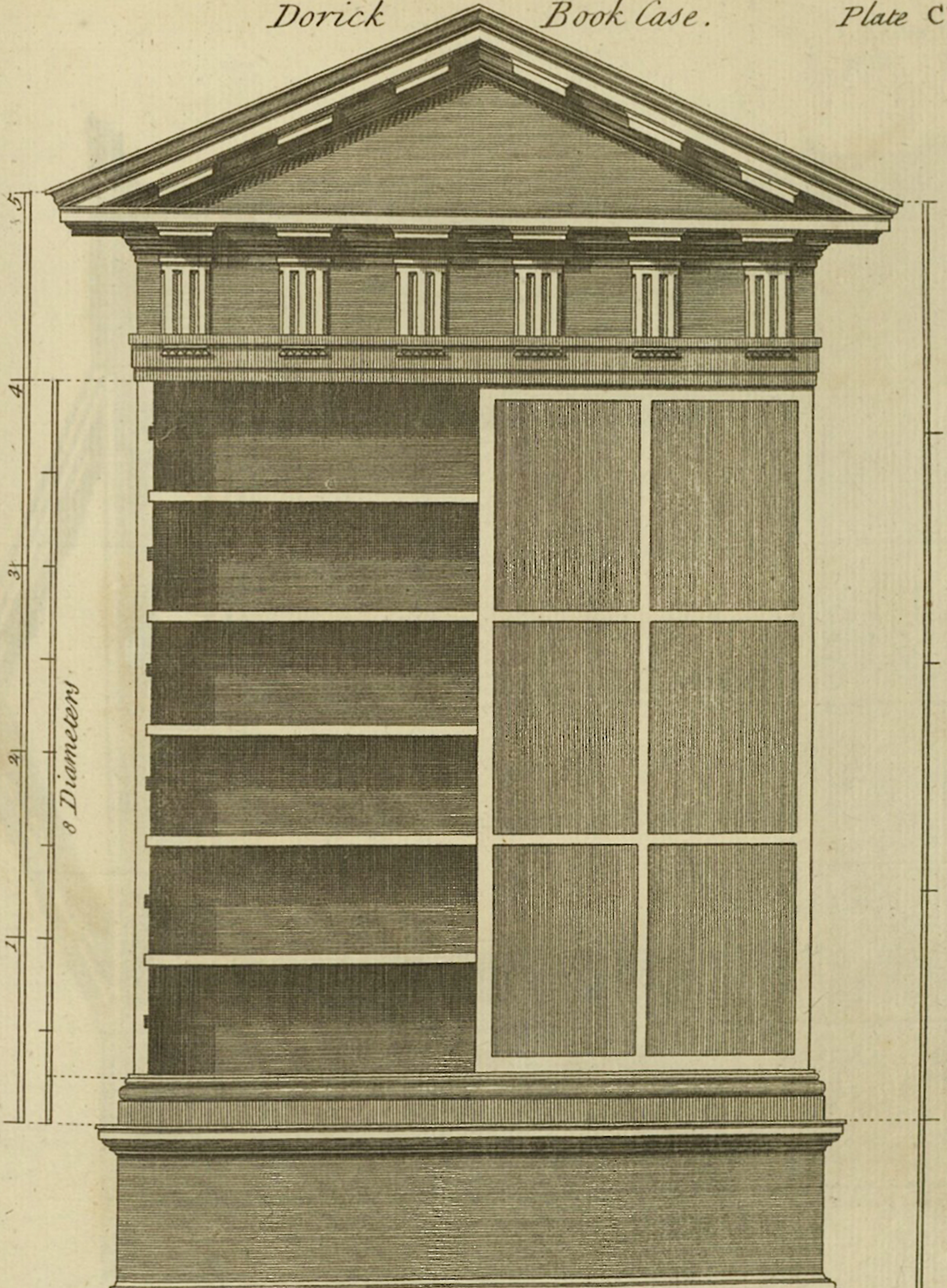

7 Diameters
7
5
1
2
3
4
5
1
2
3
4
5

Batty Langley Invent. 1739.

Thoˢ. Langley Sculp.

Dorick Book Case.

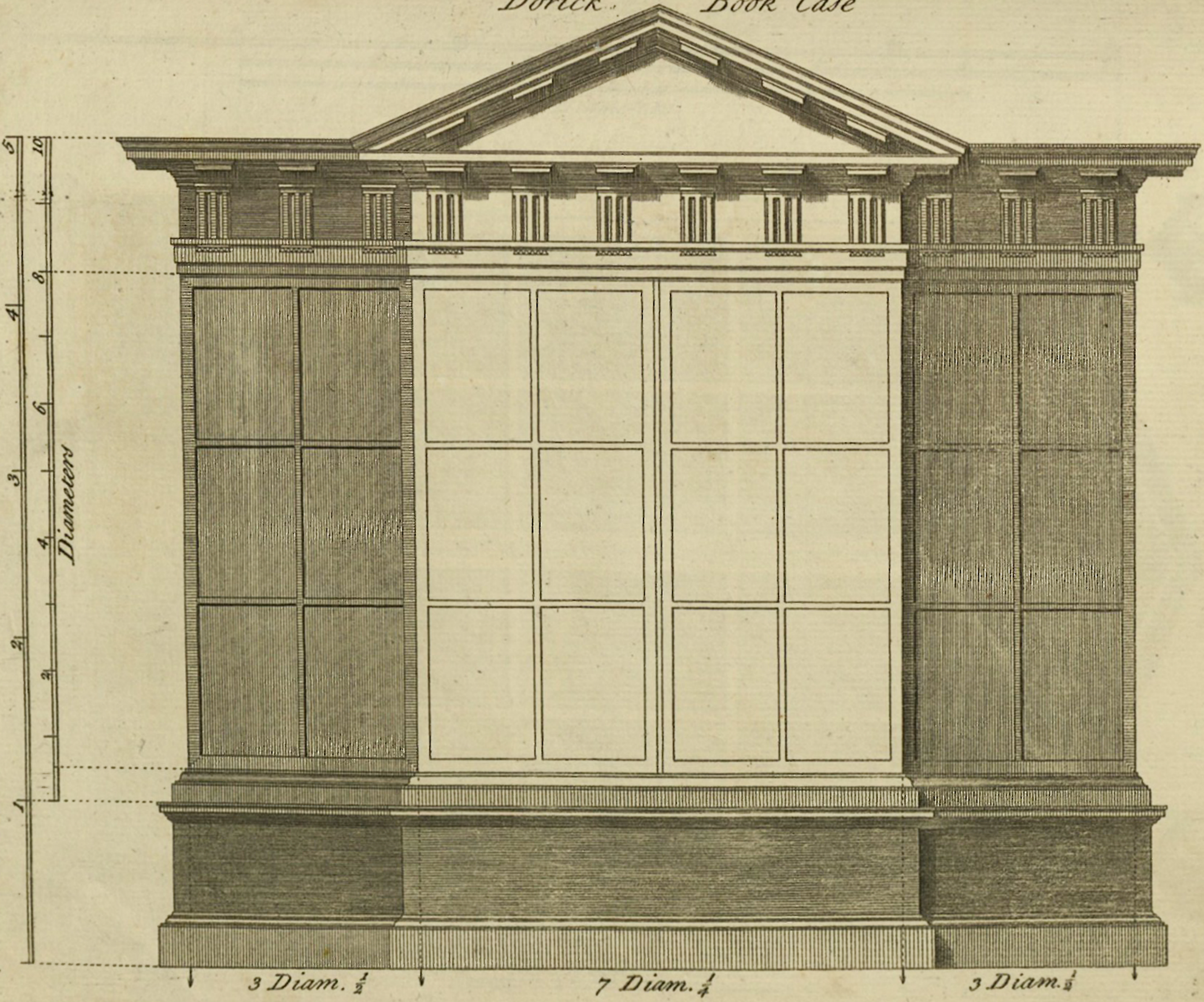
Plate CLIX.


5
4
3
2
1
8 Diameters

Batty Langley Invent. 1739.

T. Langley Sculp.

Dorick Book Case


10
8
6
4
2
5
4
3
2
1
Diameters
3 Diam. $\frac{1}{2}$
7 Diam. $\frac{1}{4}$
3 Diam. $\frac{1}{2}$

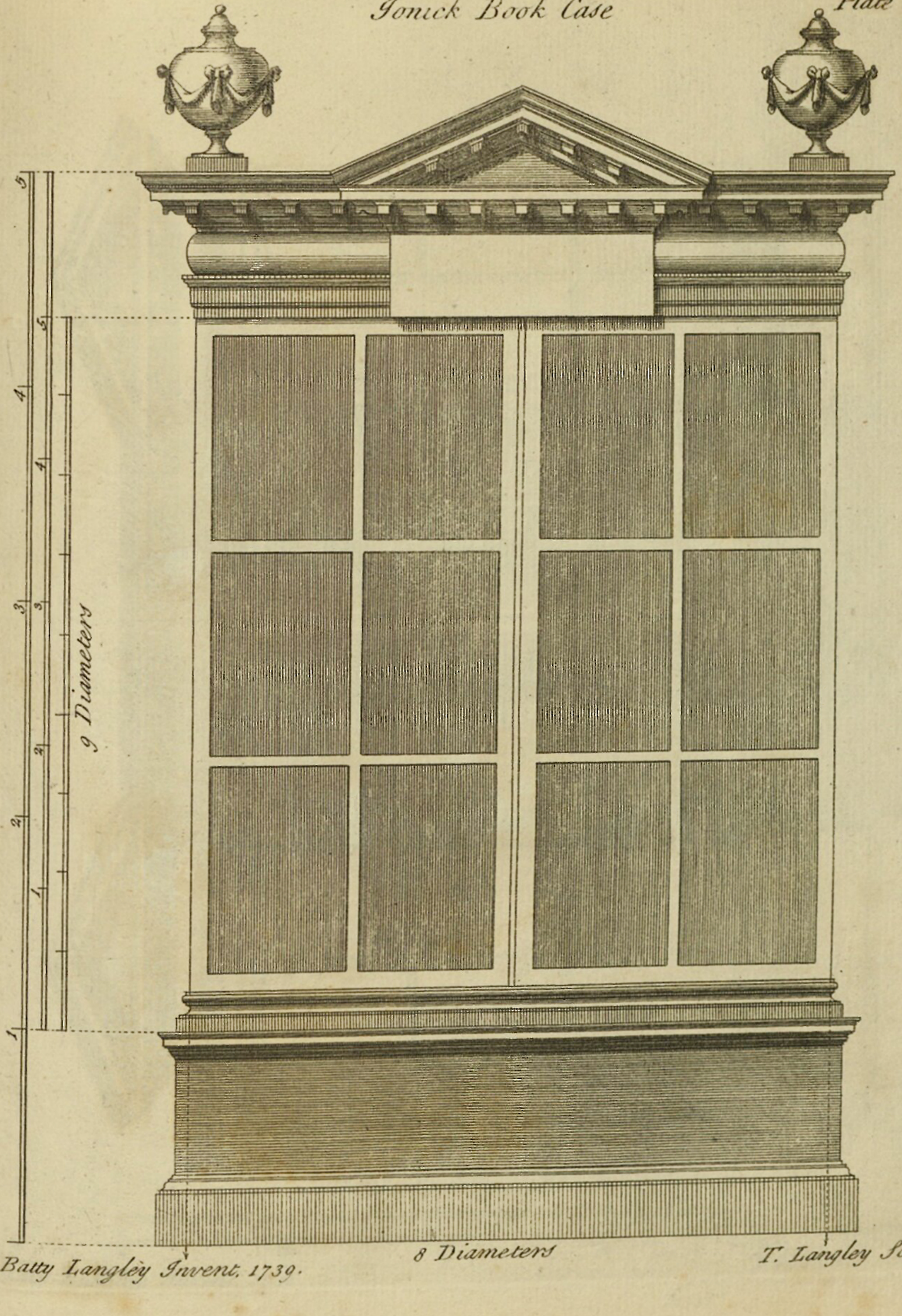
Batty Langley Invent.

T. Langley Sculp.

Plate CLX.

Ionick Book Case

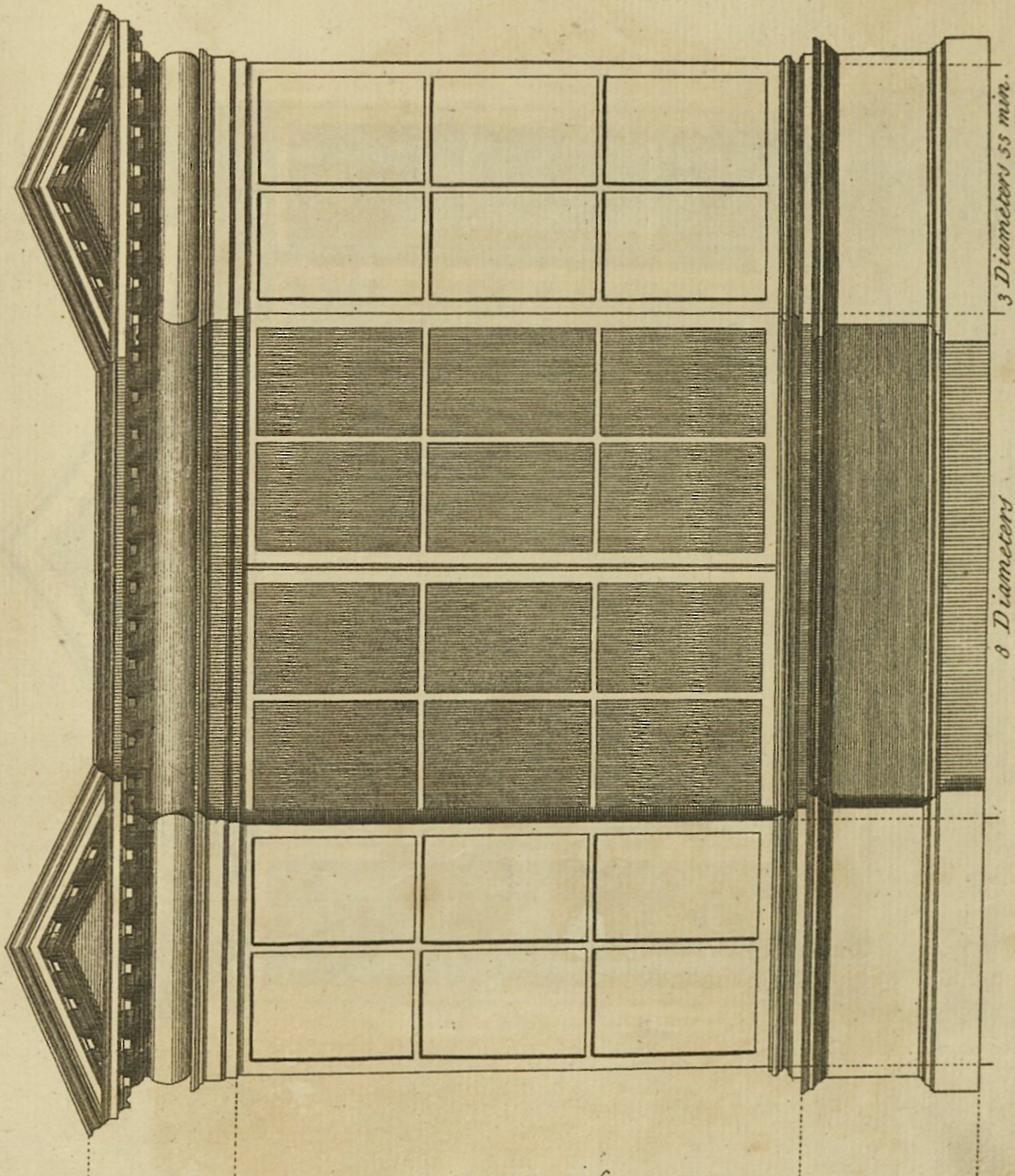
Plate CLXI.


9 Diameters
8 Diameters
1
2
3
4
5

Batty Langley Invent. 1739.

T. Langley Sculp.

Plate CLXII.

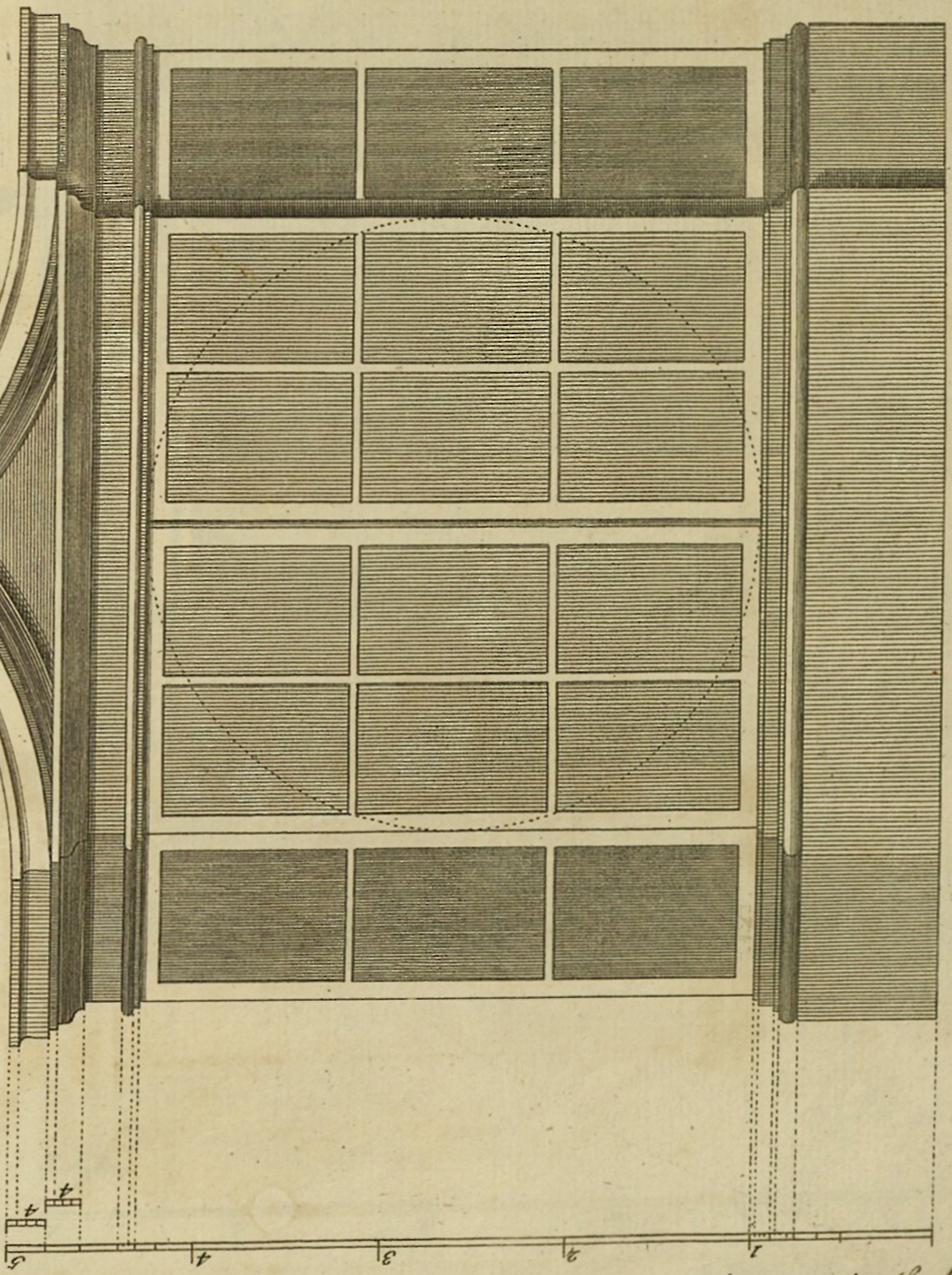

3 Diameters 55 min.
8 Diameters
9 Diameters
1 2 3 4 5
1 2 3 4 5

Batty Langley Invent. 1739.

T. Langley Sculp.

Plate CLXIII.

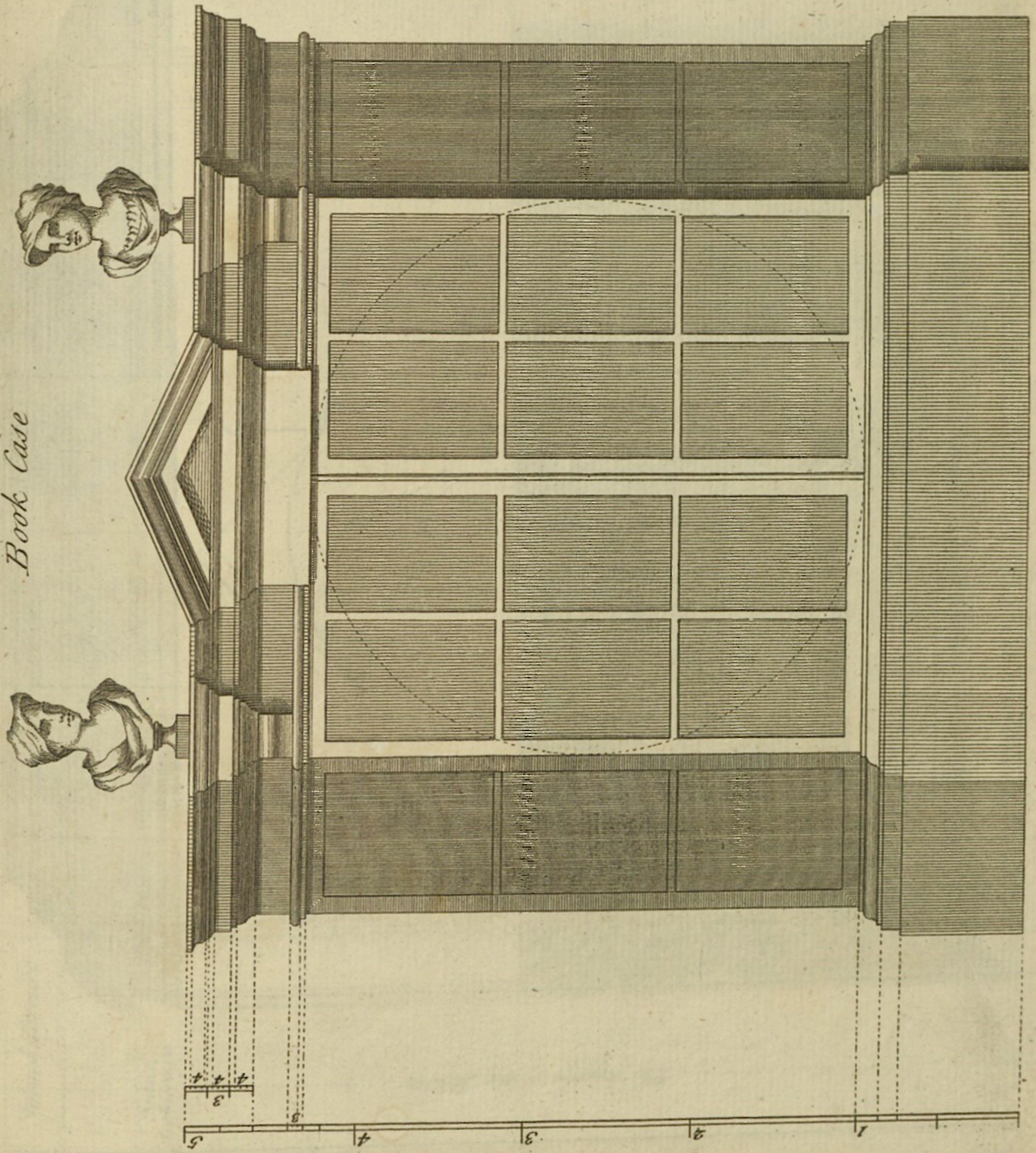
Book Case.



Batty Langley Invent 1739. *Thoˢ. Langley Sculp.*

Plate CLXIV.

Book Case



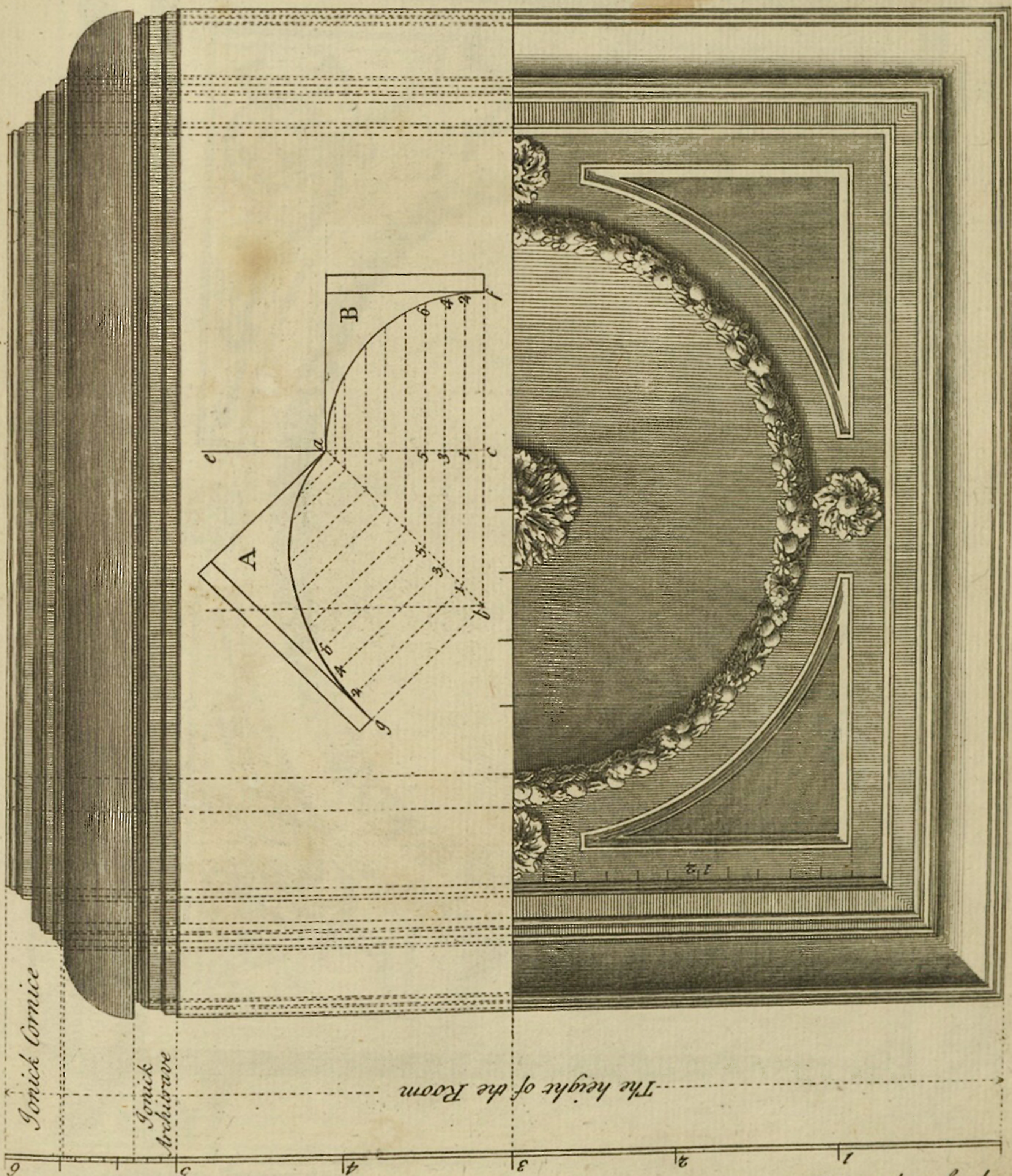
1
2
3
4
5
3
4
4
4
8

Tho.s Langley Sculp.

Batty Langley Invent 1739.

Cielling Piece

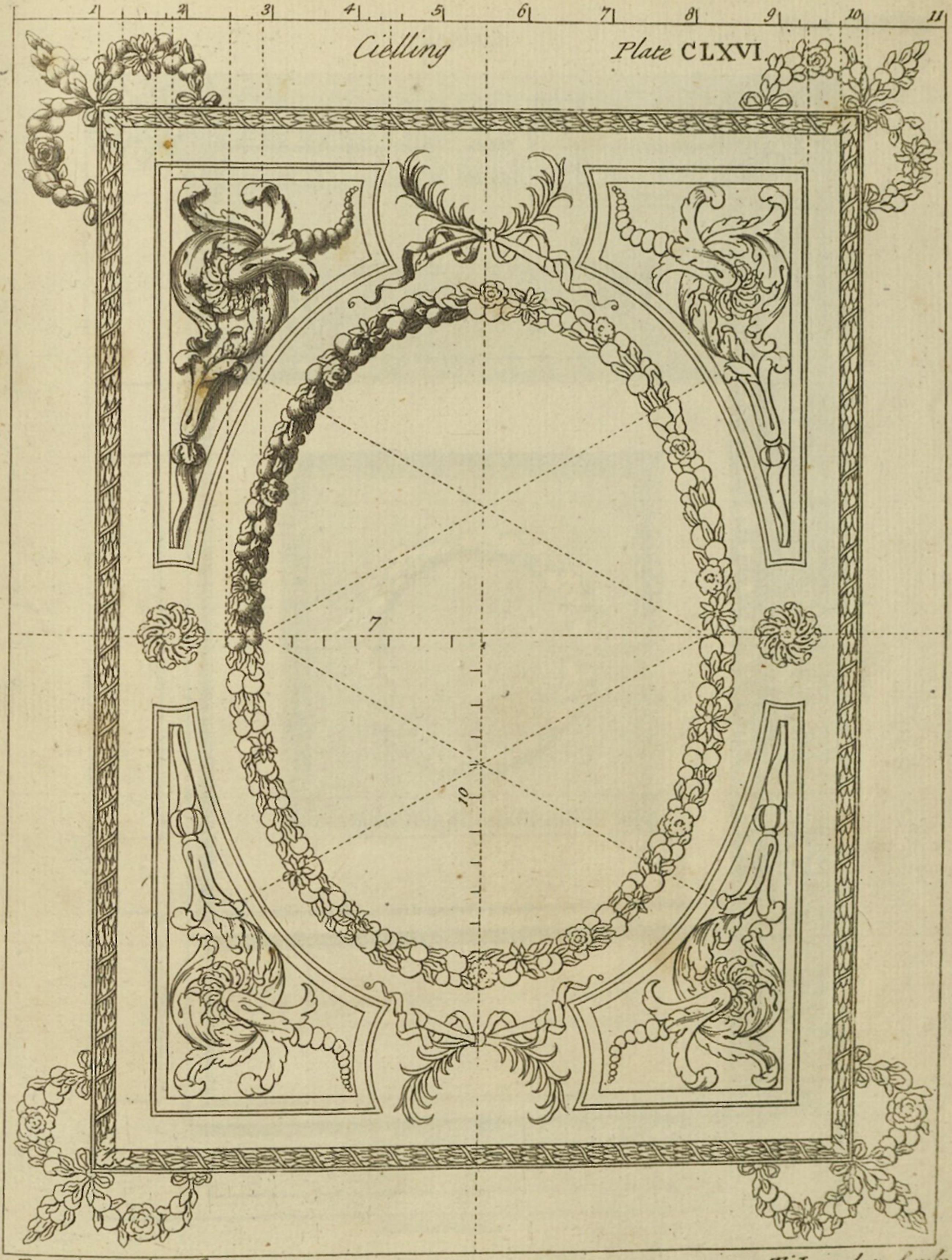
Plate CLXV.


A
B
a
c
e
f
g
Ionick Cornice
Ionick Architrave
The height of the Room
12
1
2
3
4
5
6

Batty Langley Invent 1739.

T. Langley Sculp.

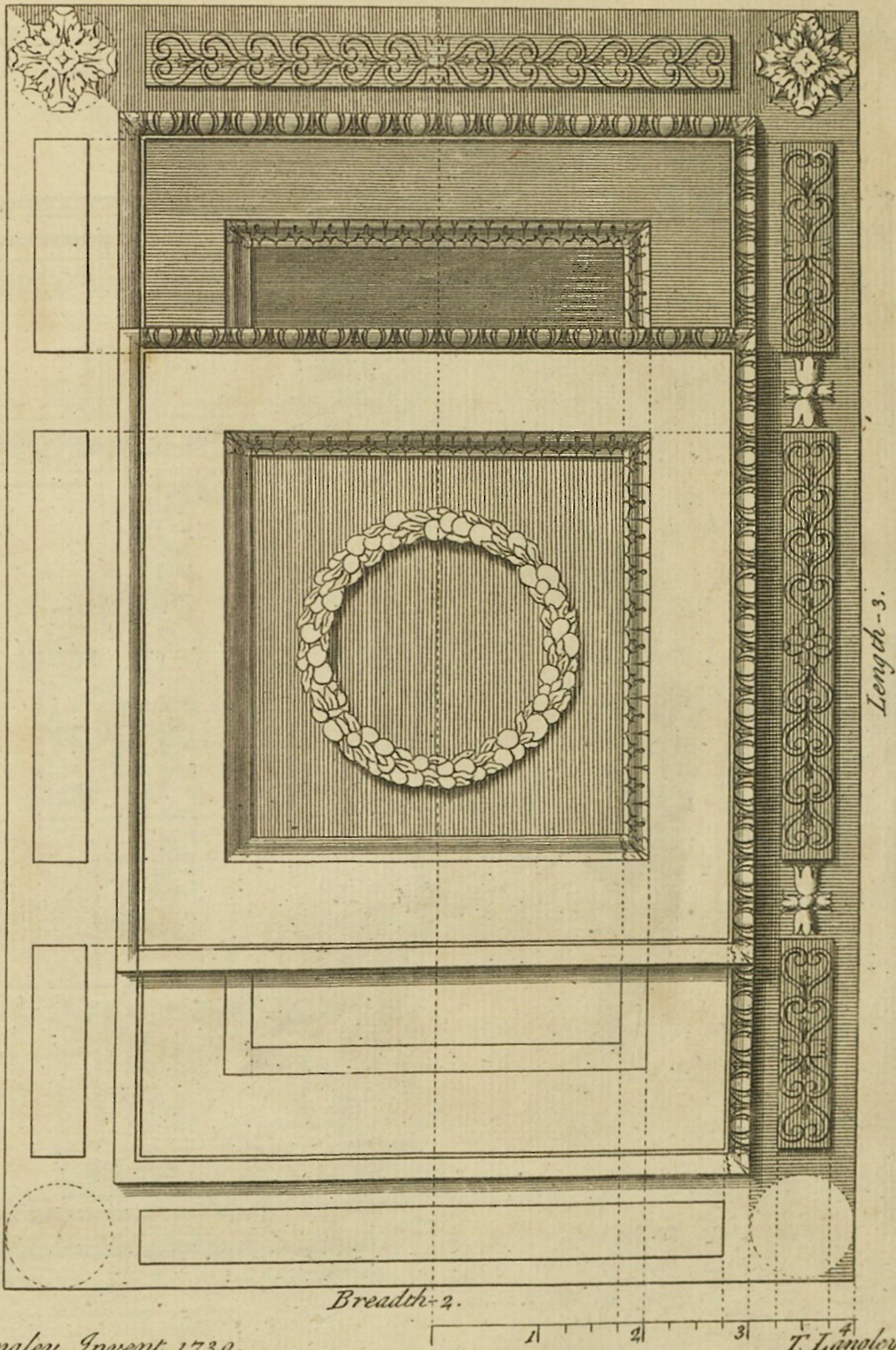
Cielling *Plate* CLXVI


1
2
3
4
5
6
7
8
9
10
11
7
10

Batty Langley Invent 1739. *T. Langley Sculp.*

Cielling.

Plate CLXVII.

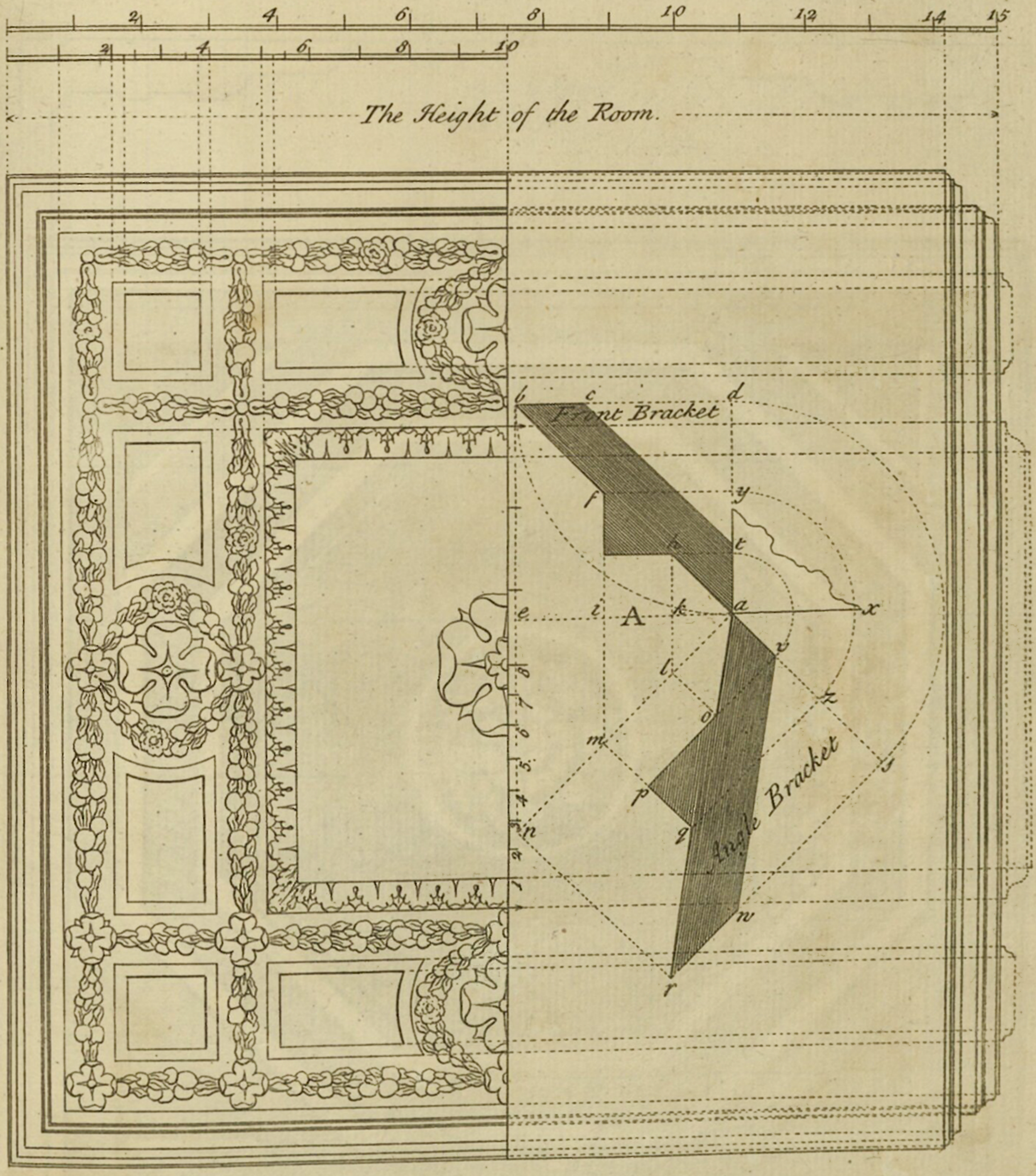

Length - 3.
Breadth ÷ 2.
1
2
3
4

Batty Langley Invent 1739.

T. Langley Sculp.

Cielling.

Plate CLXVIII.

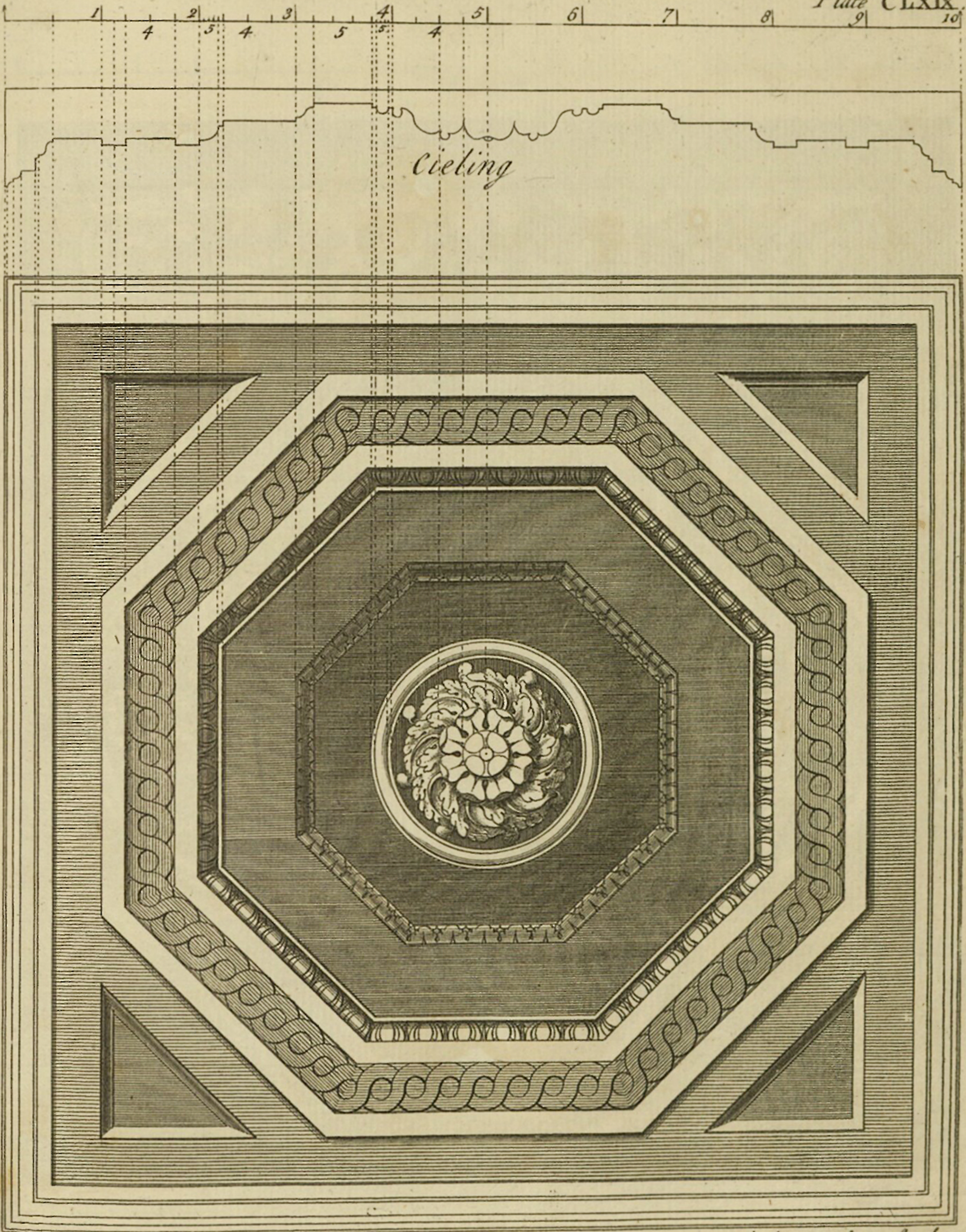


2
4
6
8
10
12
14
15
2
4
6
8
10
The Height of the Room.
b
c
d
Front Bracket
f
y
h
t
e
i
A
k
a
x
l
v
o
z
m
s
p
n
q
Angle Bracket
w
r
1
2
3
4
5
6
7
8

Batty Langley Invent 1739.

T. Langley Sculp.

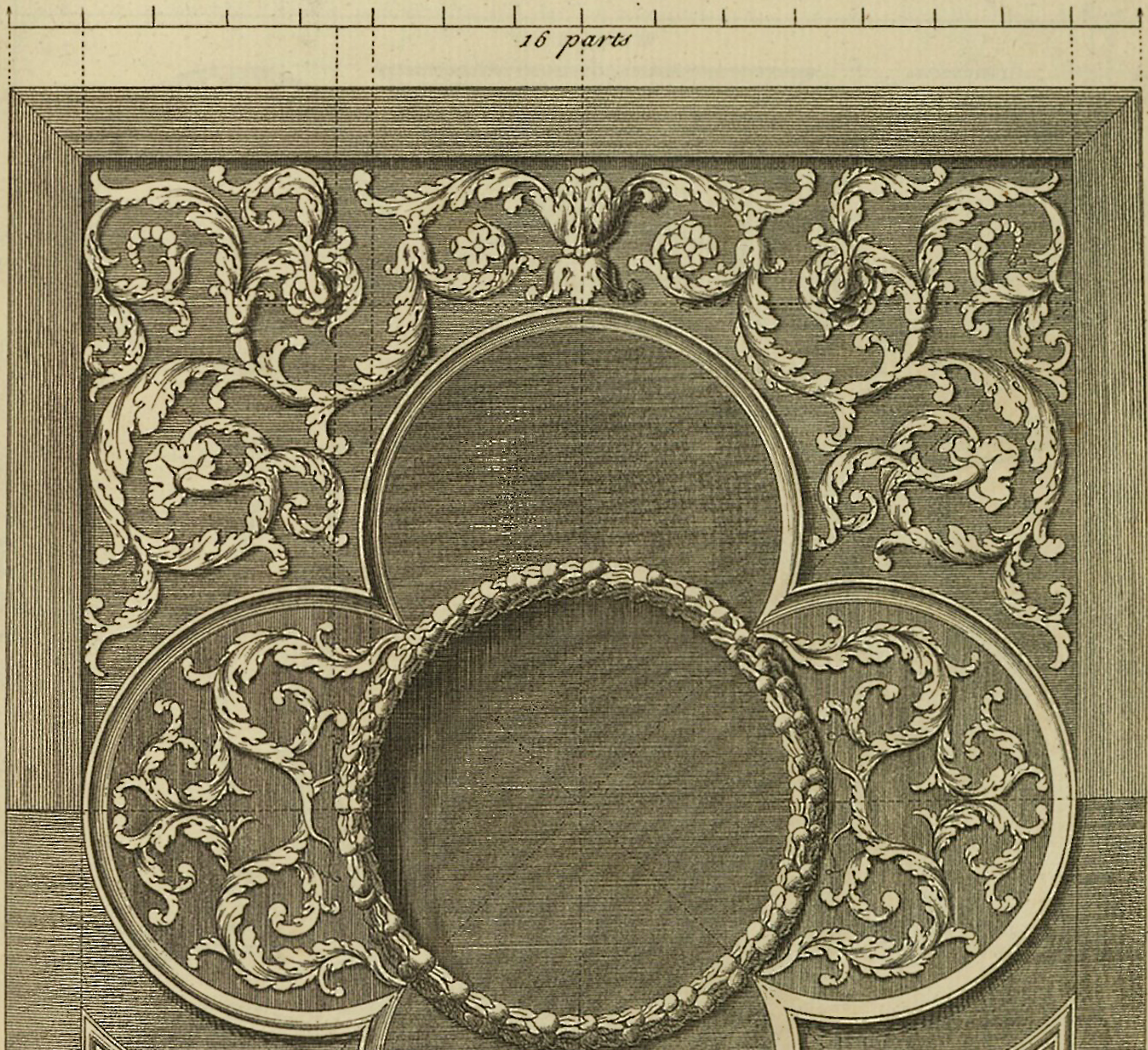
Plate CLXIX.


1
2
3
4
5
6
7
8
9
10
4
5
4
5
5
4
Cieling

Batty Langley Invent 1739.

Thoˢ Langley Sculp.

Cieling

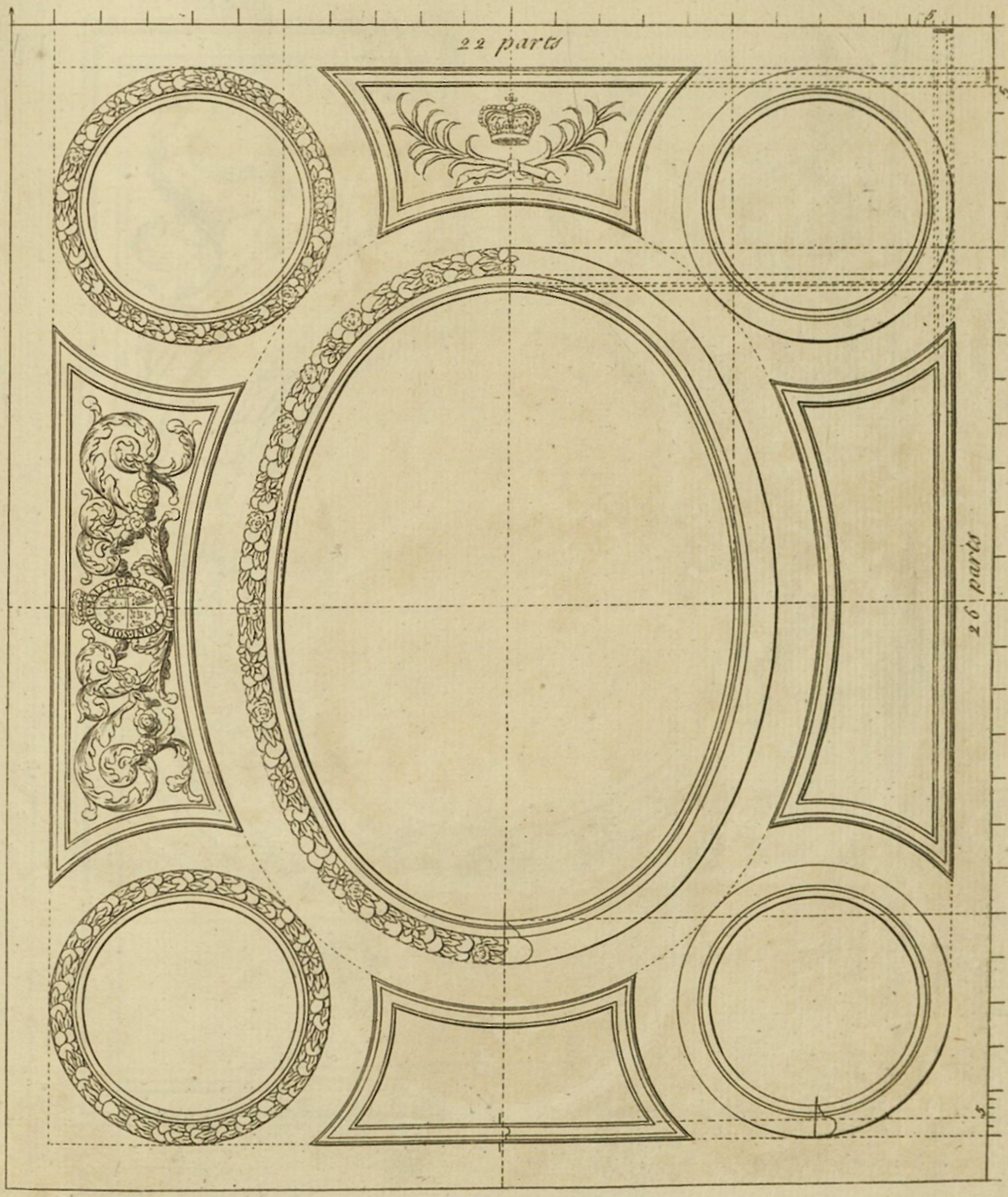


Batty Langley Invent 1739.

T. Langley Sculp.

Plate CLXXI.

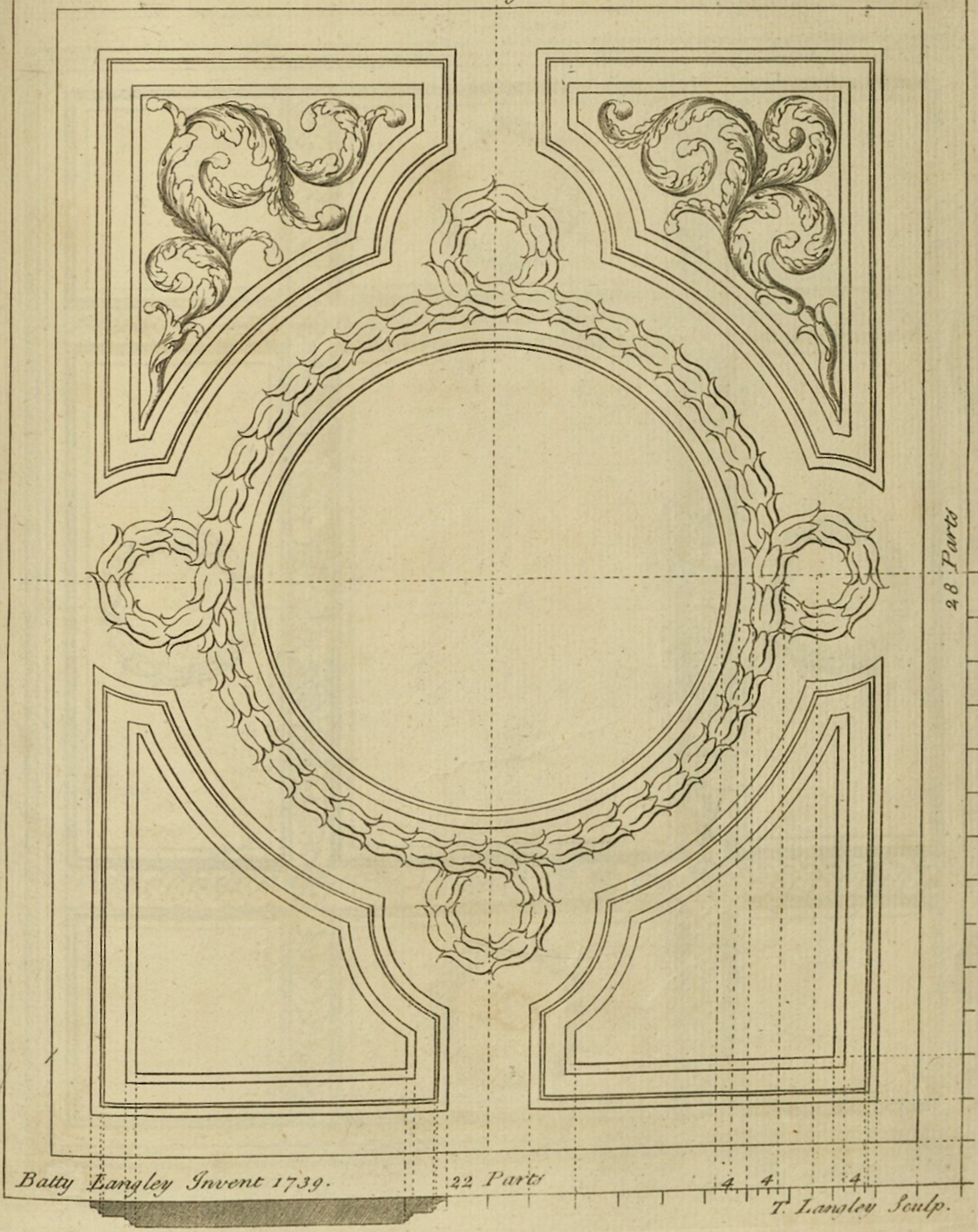
Cieling


22 parts
5
26 parts
5
5

Batty Langley Invent 1739.

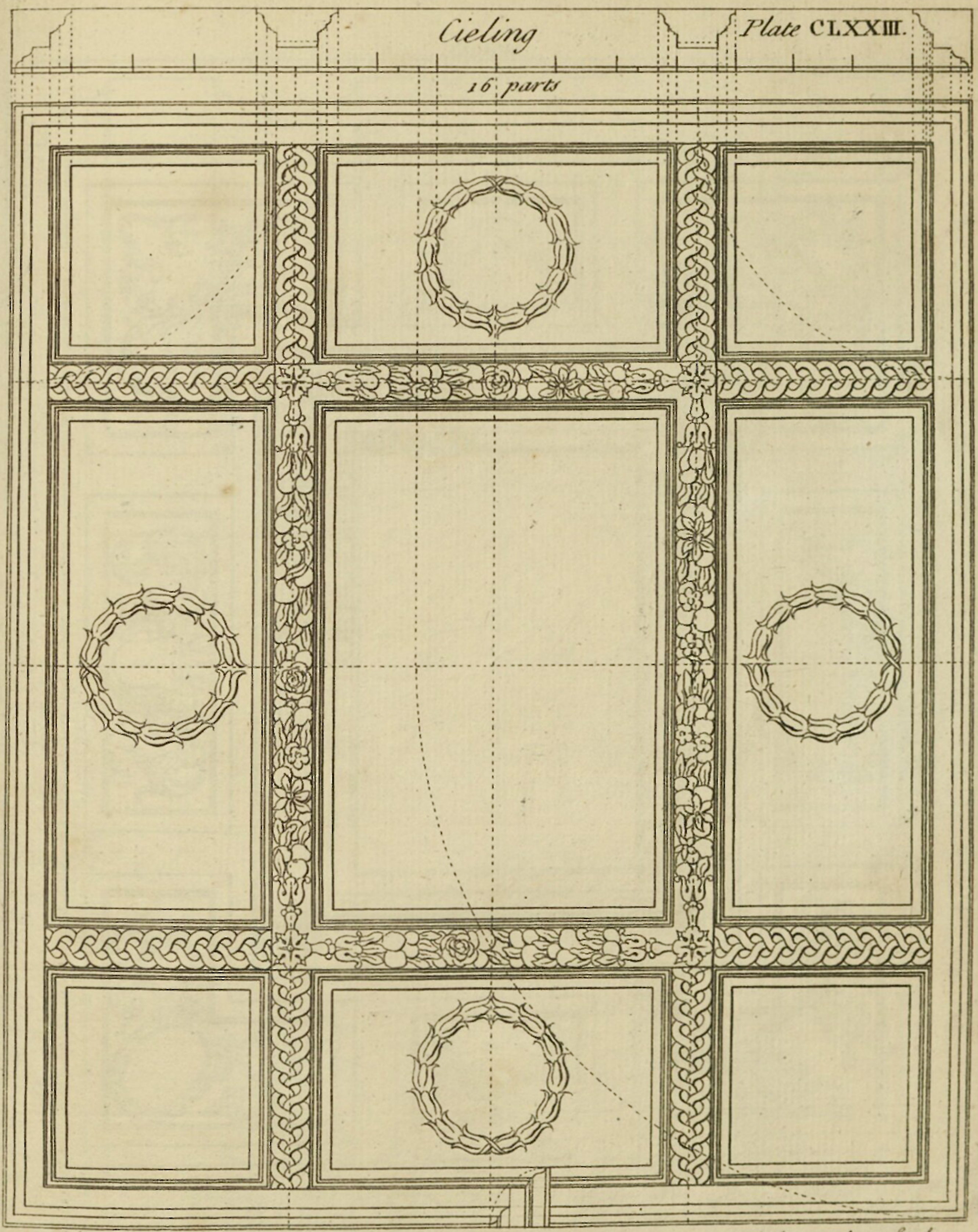
T. Lanley Sculp.

Cieling


28 Parts
22 Parts
4
4
4

Batty Langley Invent 1739.

T. Langley Sculp.

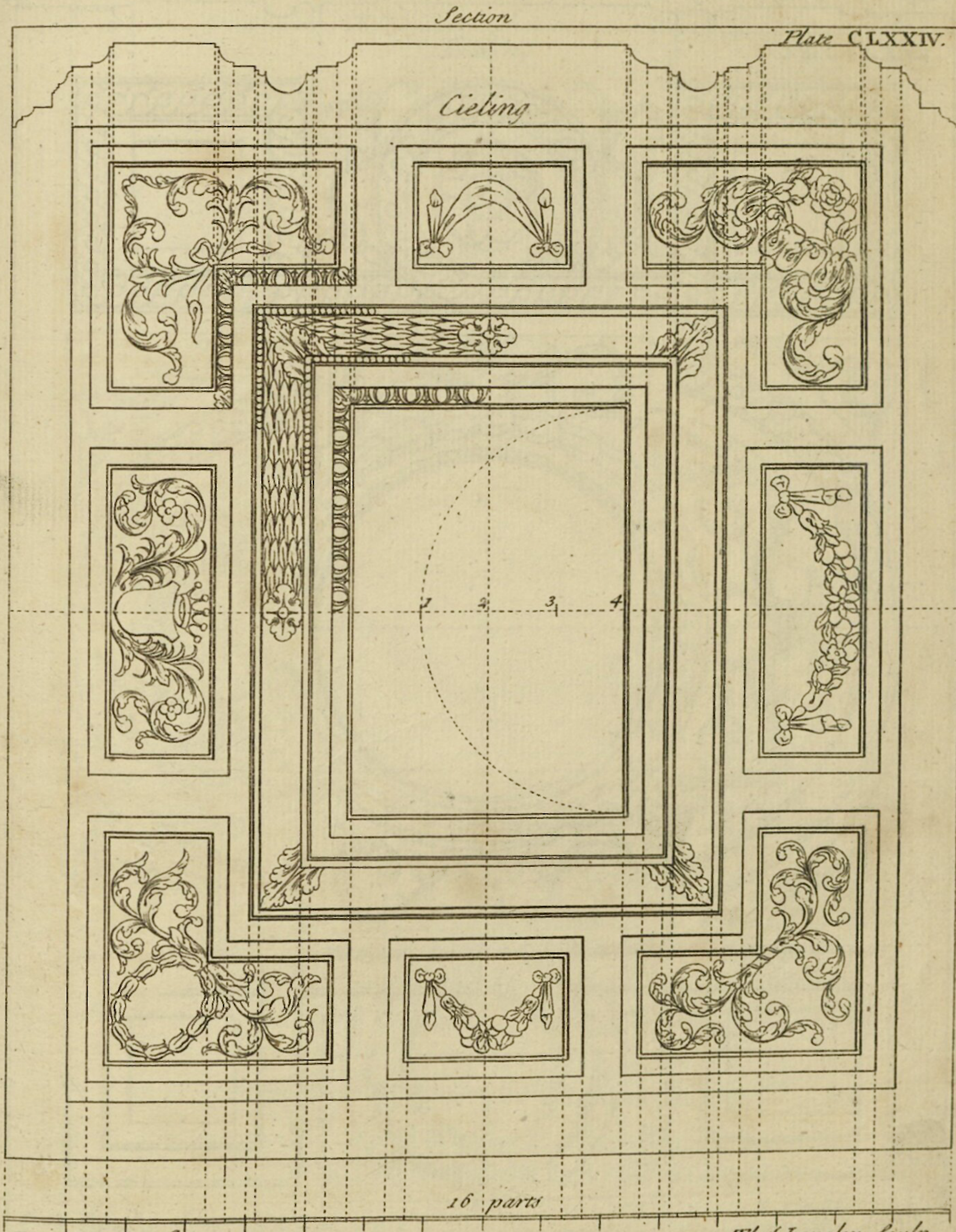


Cieling

Plate CLXXIII.

Batty Langley Invent 1739. *Thos. Langley Sculp.*

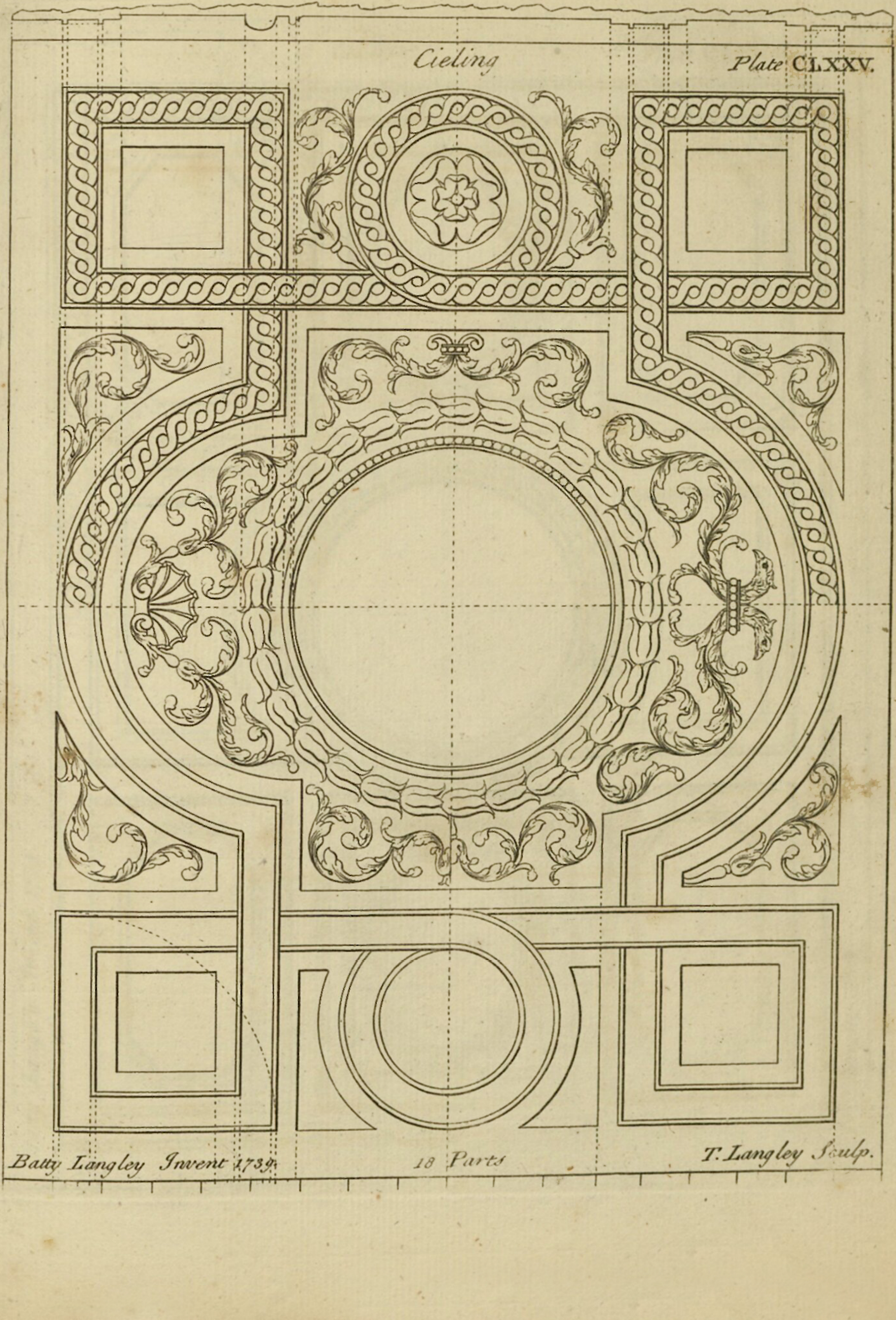
Plate CLXXIV.


Section
Cieling
1
2
3
4
16 parts

Batty Langley Invent 1739. *Thoˢ. Langley Sculp.*

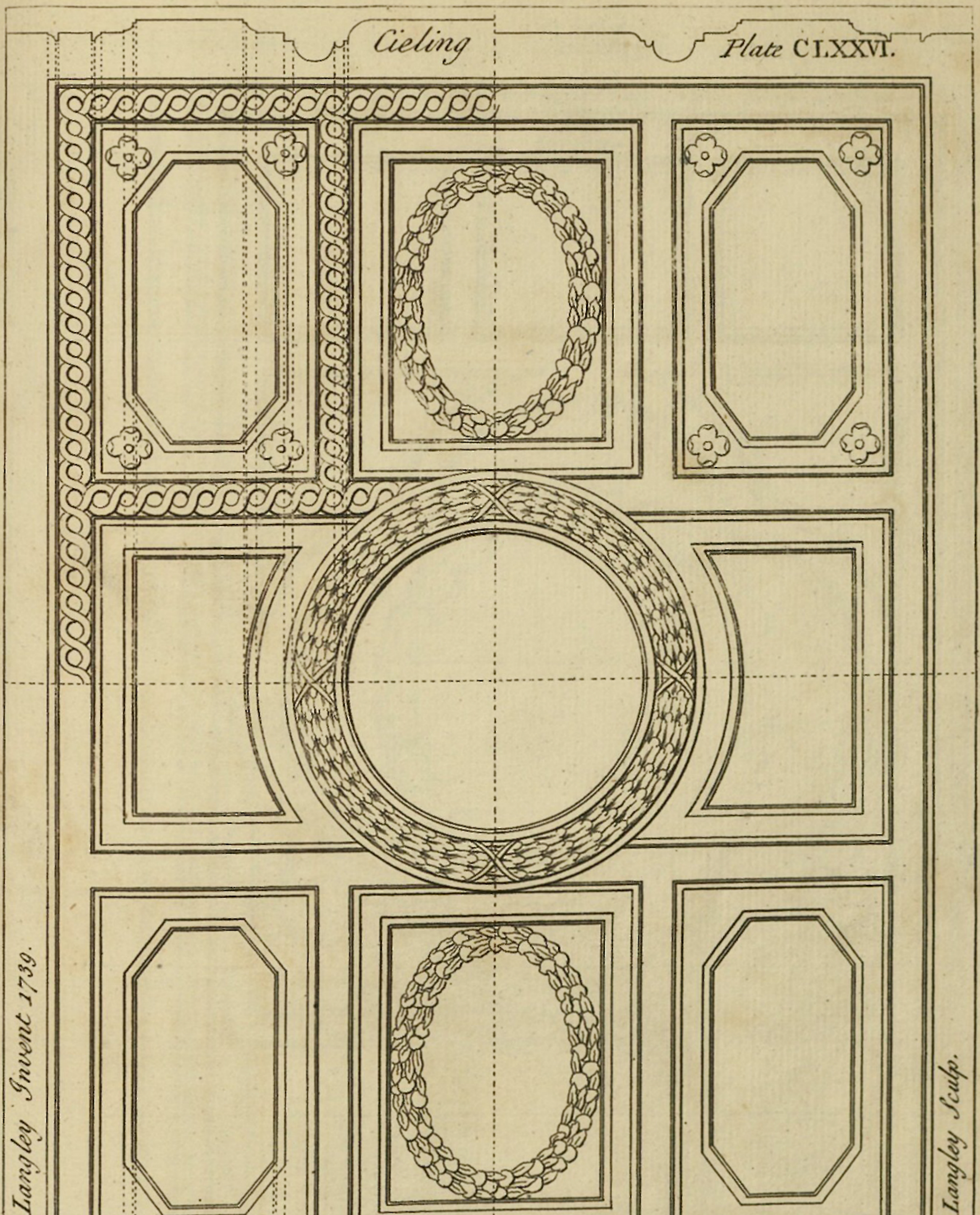
Plate CLXXV.

Cieling



Batty Langley Invent 1739.

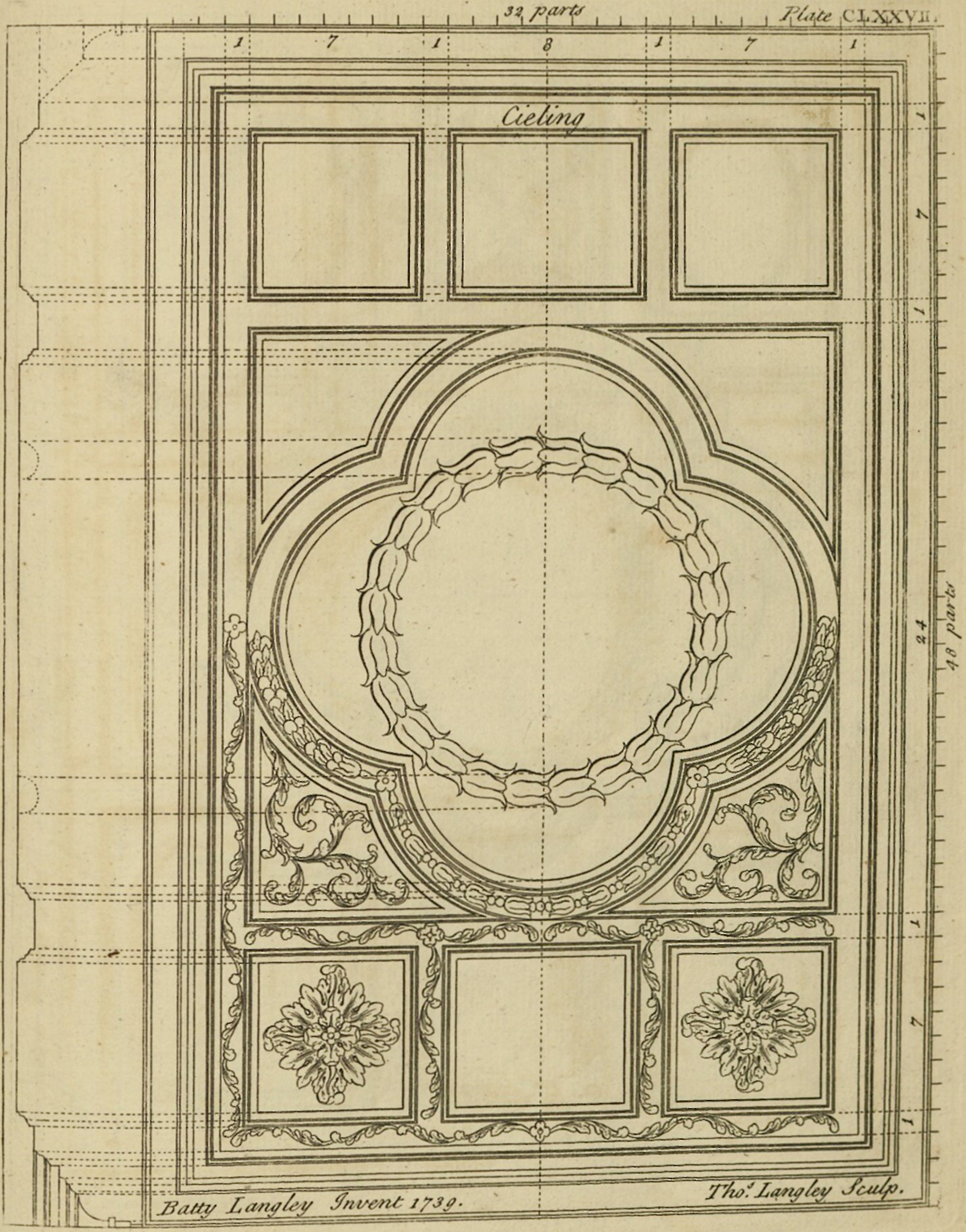
T. Langley Sculp.


Cieling
21 parts

Batty Langley Invent 1739.

Thoˢ Langley Sculp.

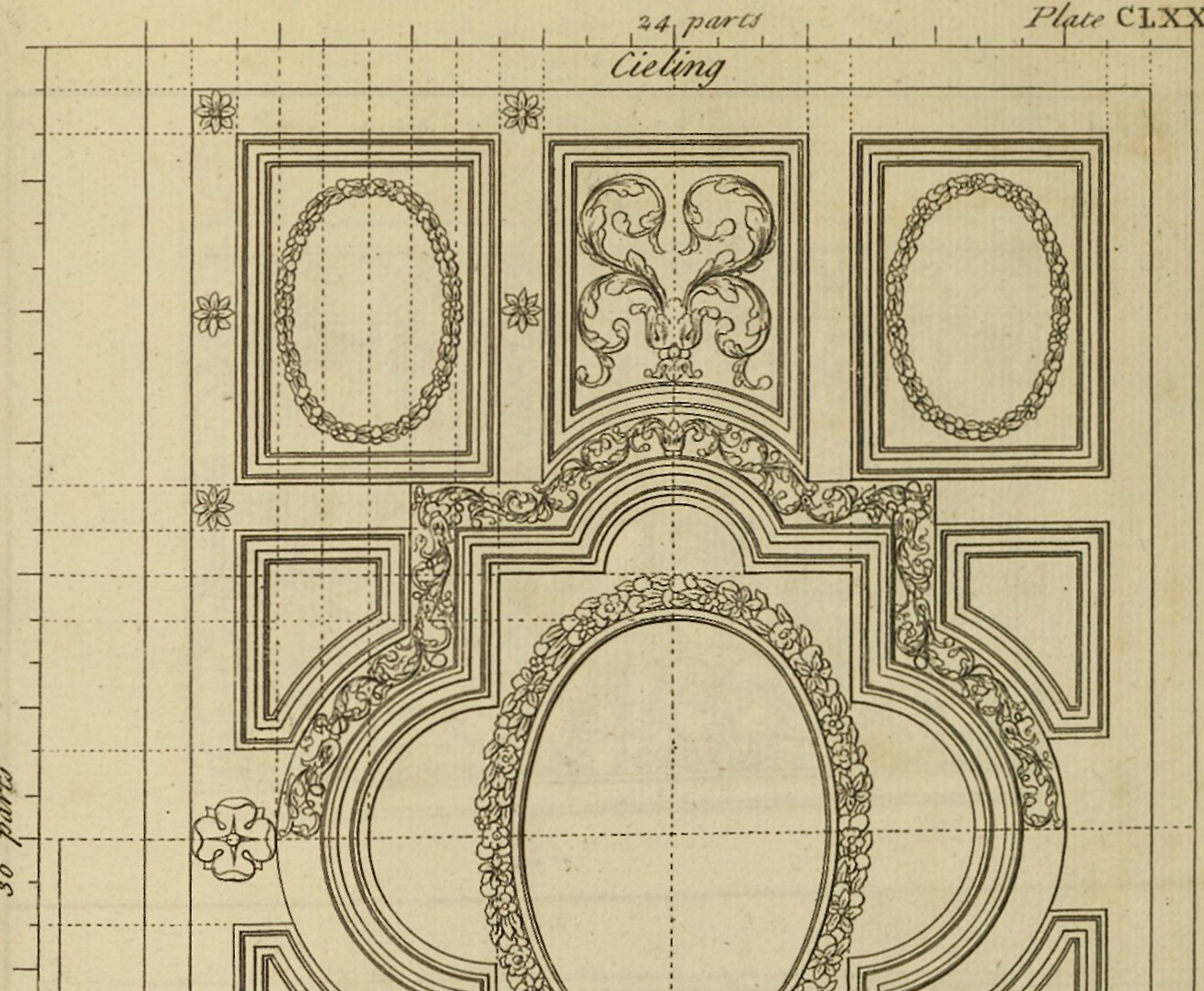
Plate CLXXVII.


32 parts
1
7
1
8
1
7
1
Cieling
1
7
1
24
48 parts
1
7
1

Batty Langley Invent 1739.

Tho.s Langley Sculp.

Plate CLXXVIII.

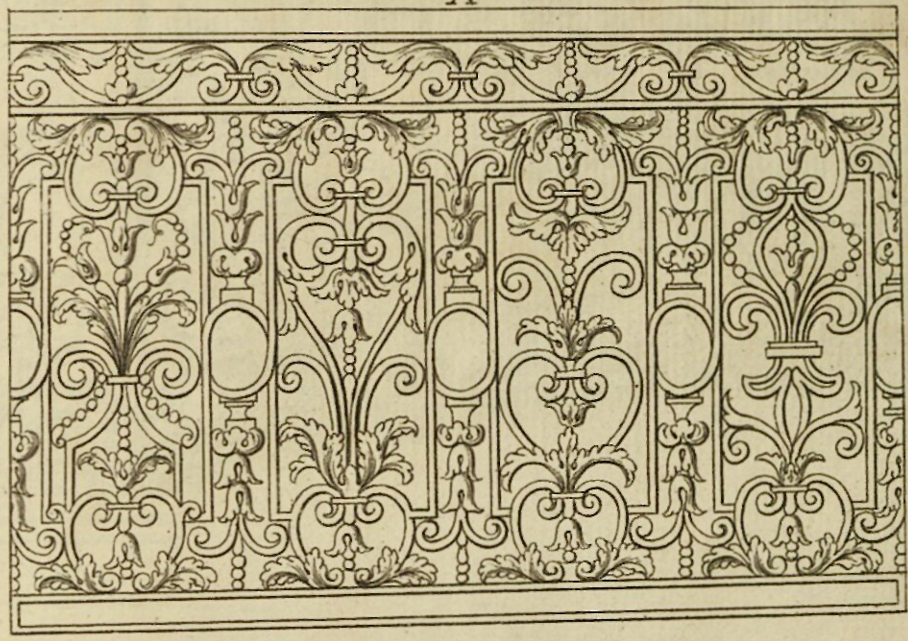

24 parts
Cieling
36 parts

Batty Langley Invent 1739. T. Langley Sculp.

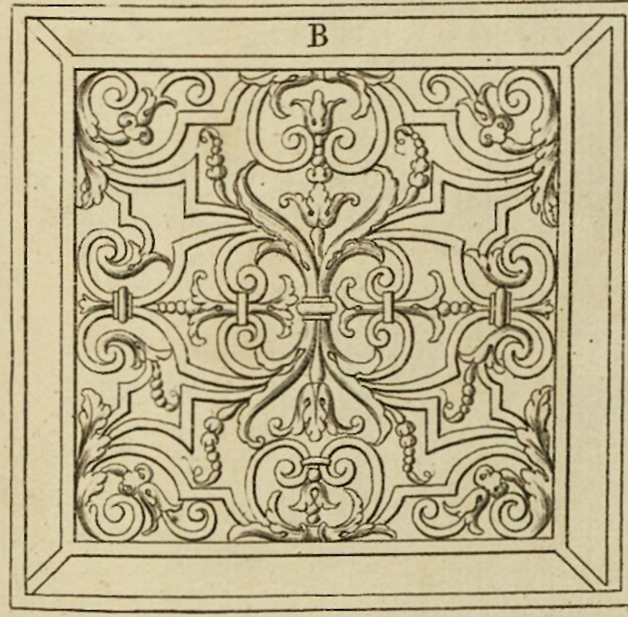
Iron-works for Pannelling &c.

Plate CLXXIX.

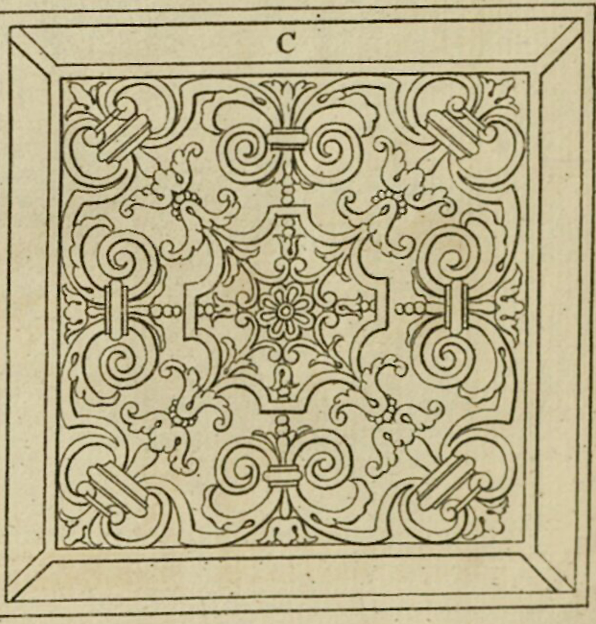
A



B



C

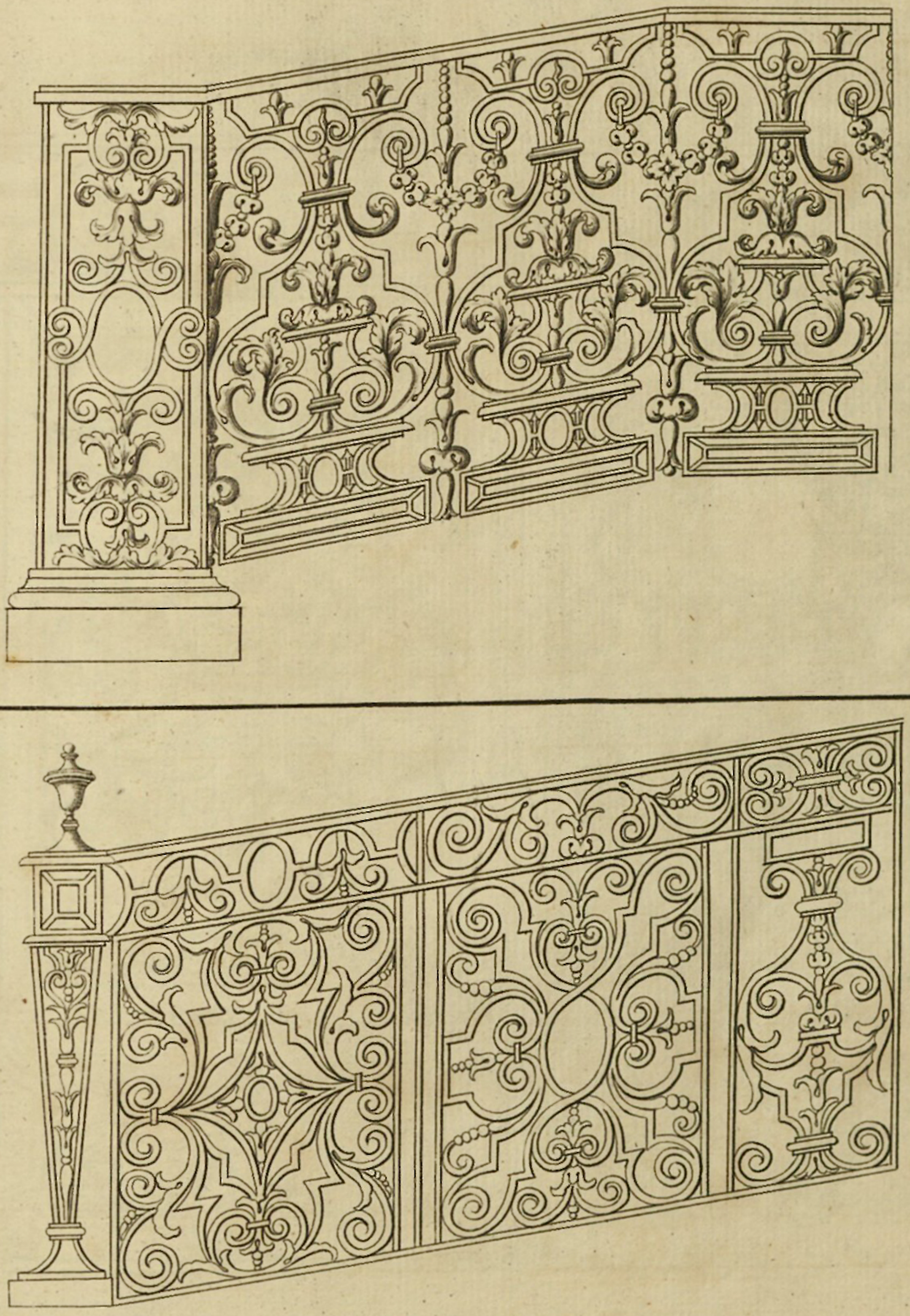


Batty Langley Invent 1739.

Thoˢ. Langley Sculp.

Iron Pannelling for Stair Cases.

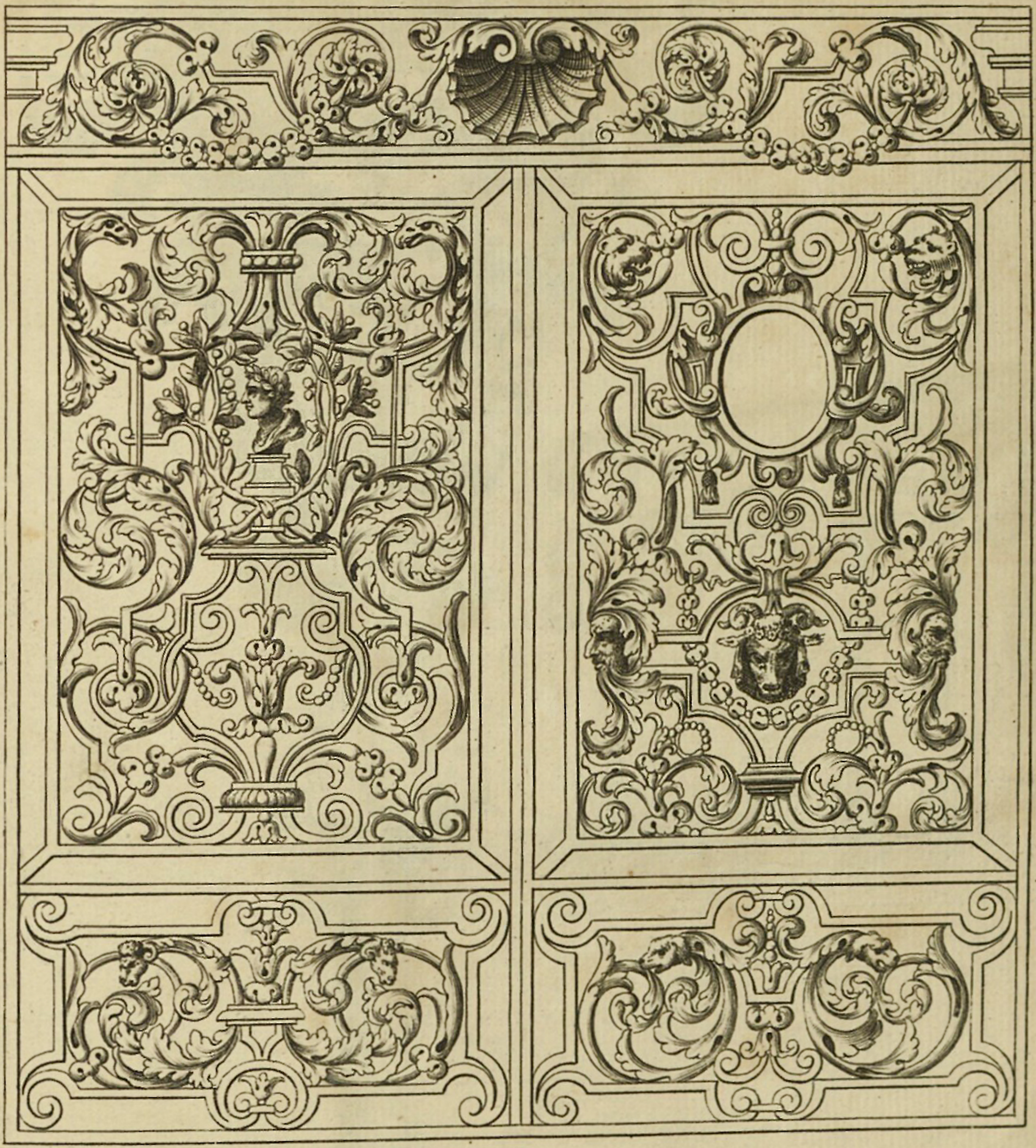
Plate CLXXX.



Batty Langley Invent 1739.

Thoˢ. Langley Sculp.

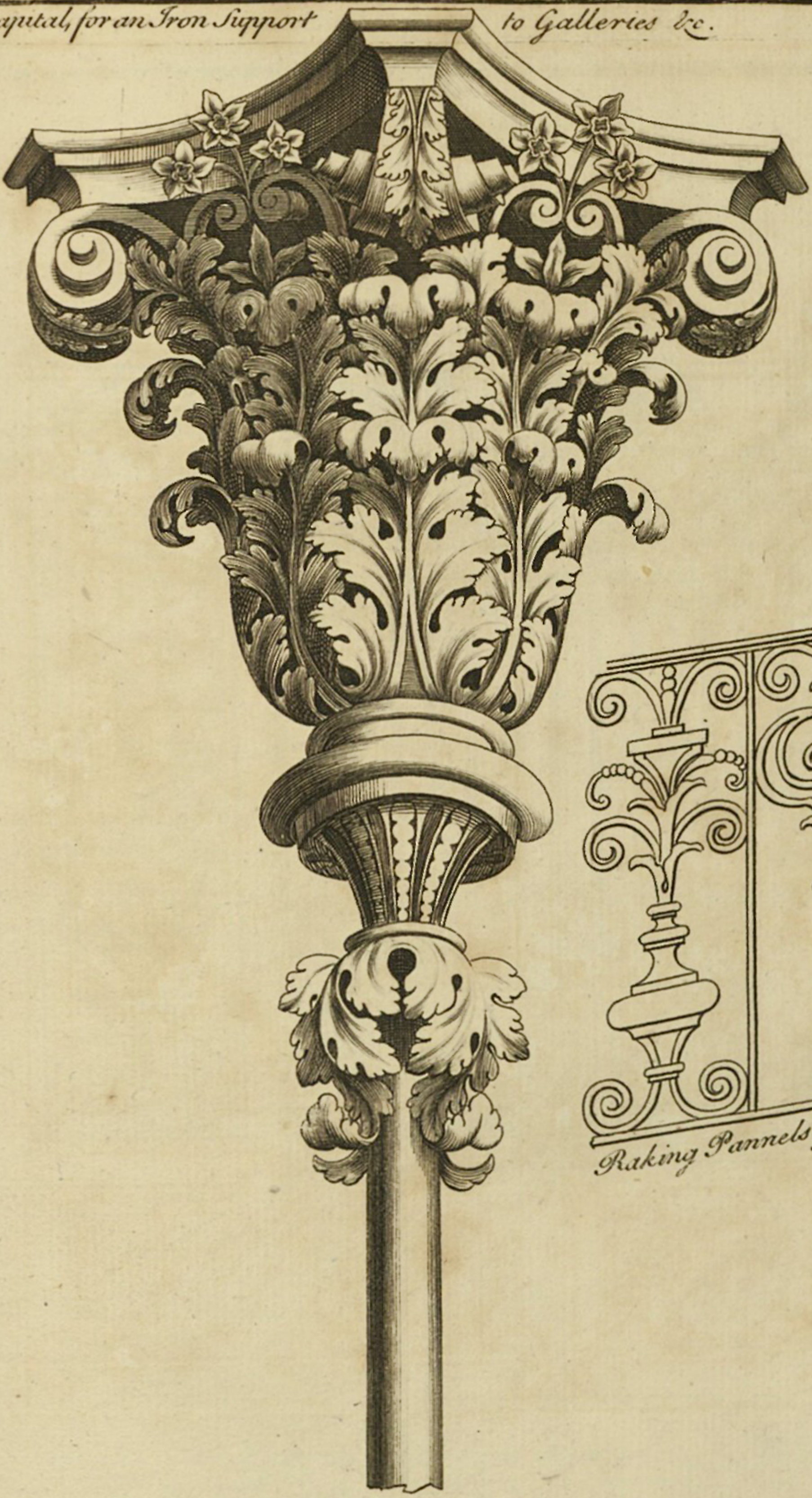
Pannels for Iron Gates &c.

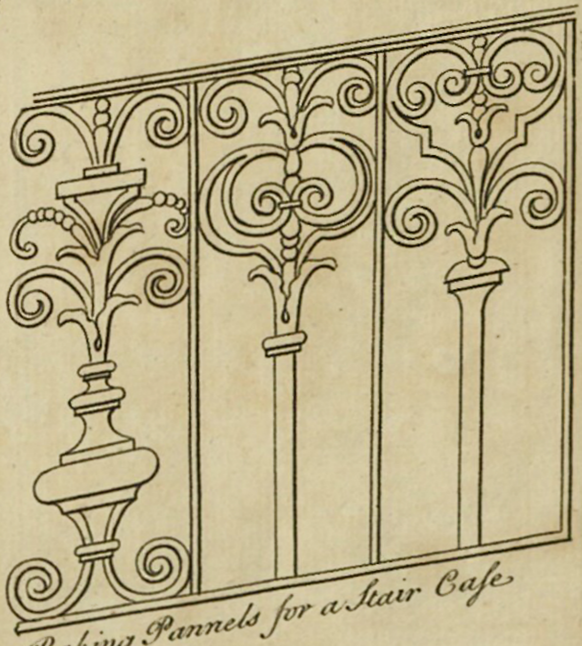


Tho. Langley Sculp

A Capital, for an Iron Support to Galleries &c.

Plate CLXXXII



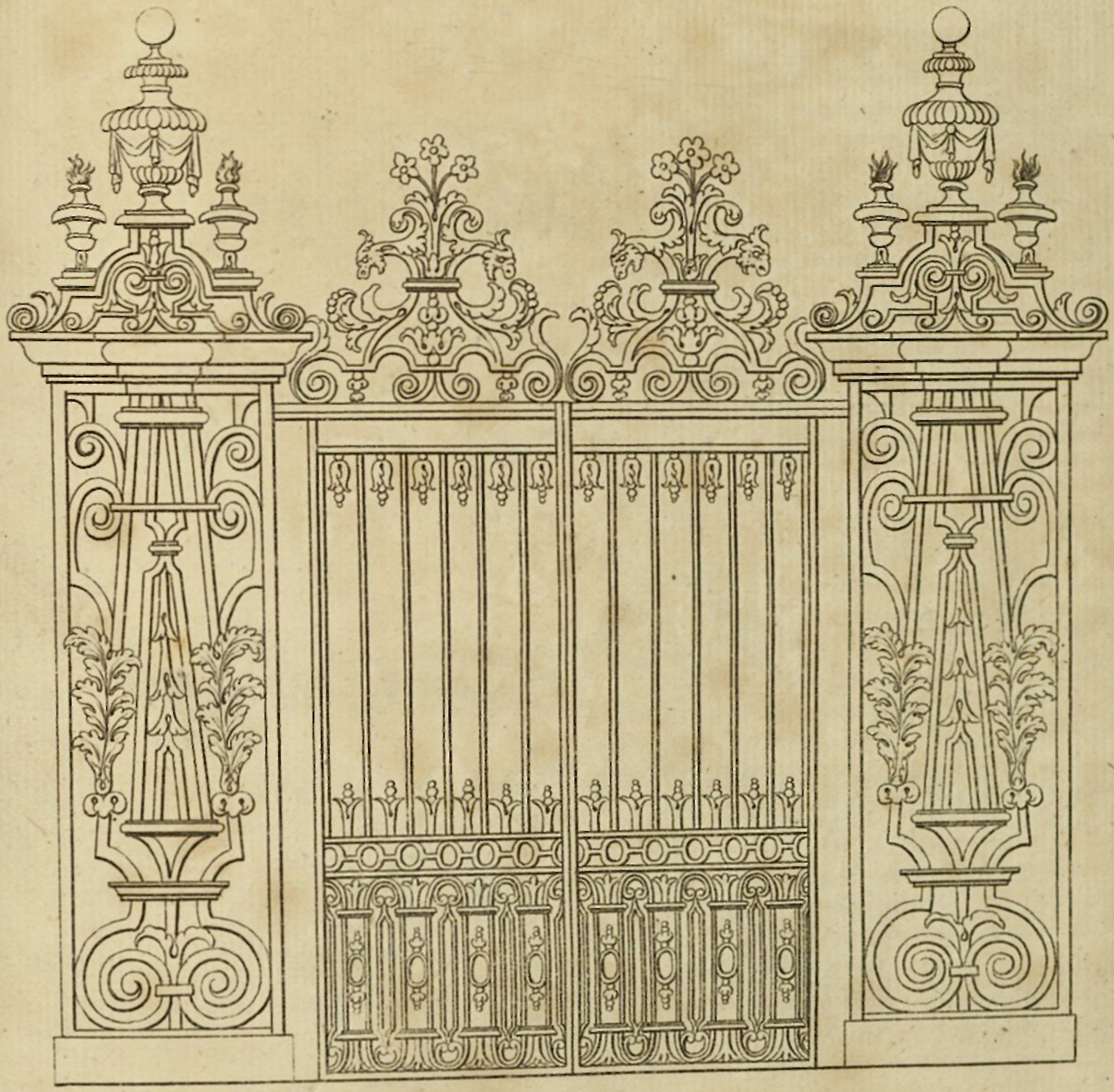


Raking Pannels for a Stair Case

Tho. Langley Sculp.

Plate CLXXXIII

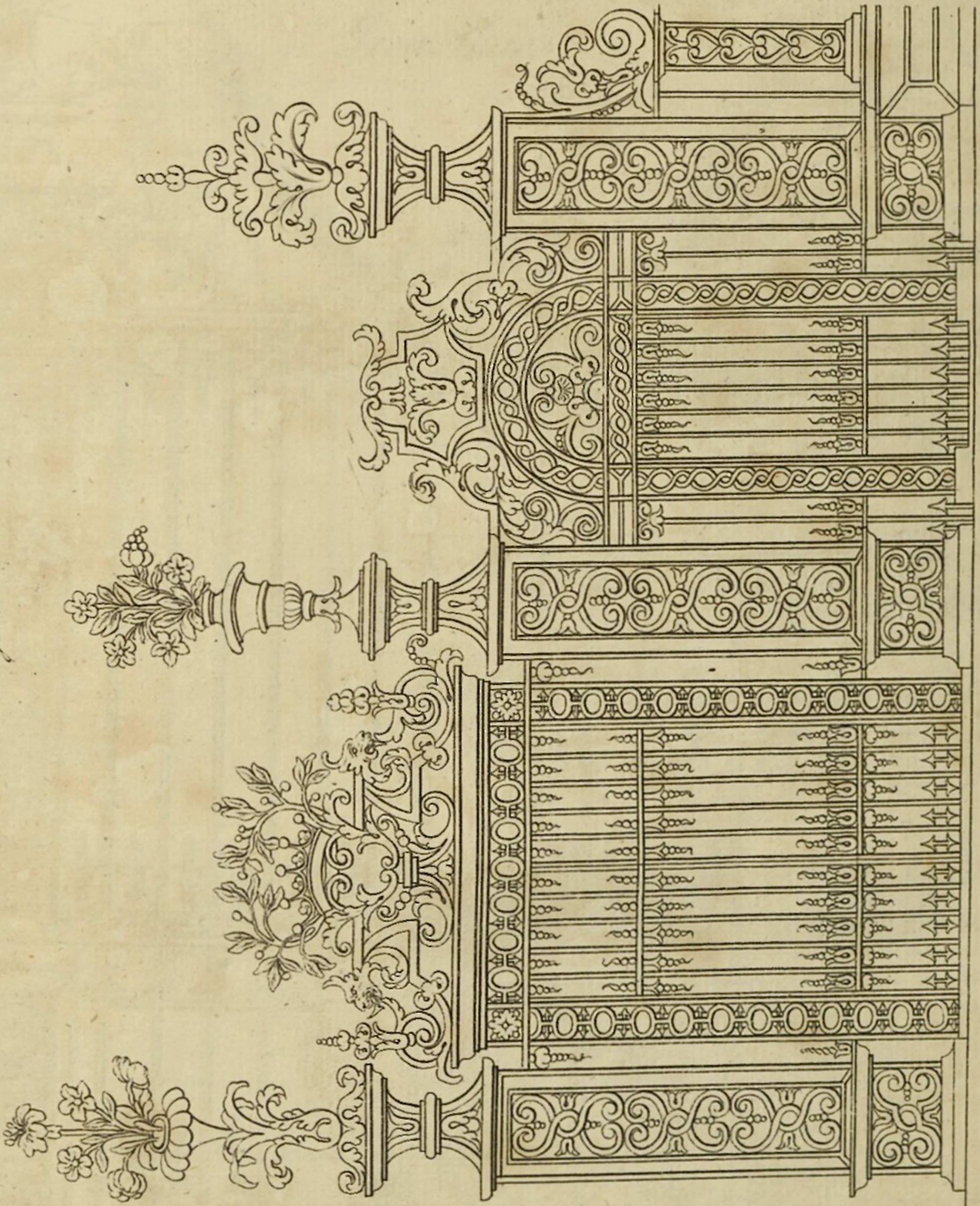
Iron Gate



Tho. Langley Sculp.

Plate CLXXXIV.

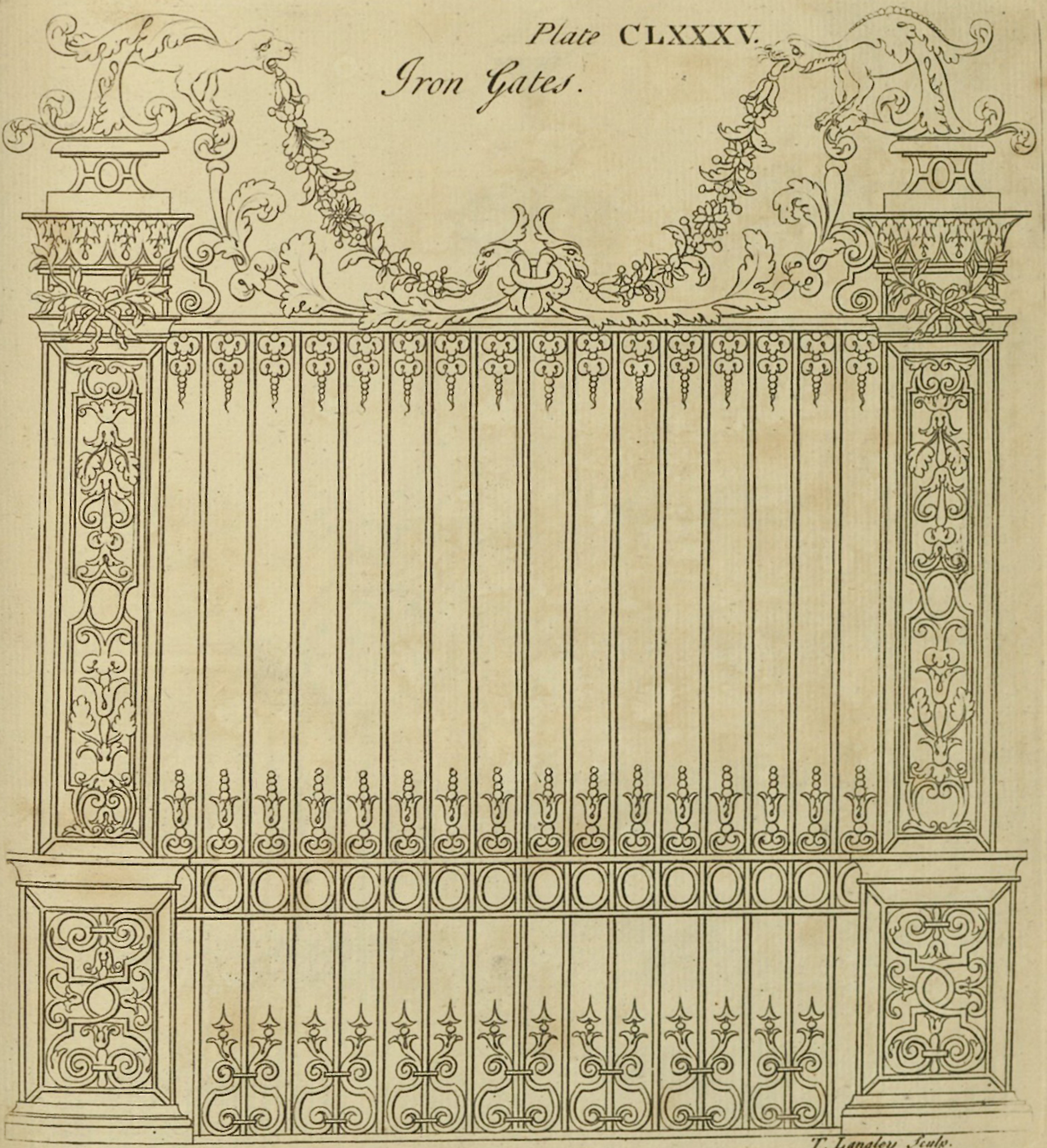
Iron Gates



T. Langley Sculp.

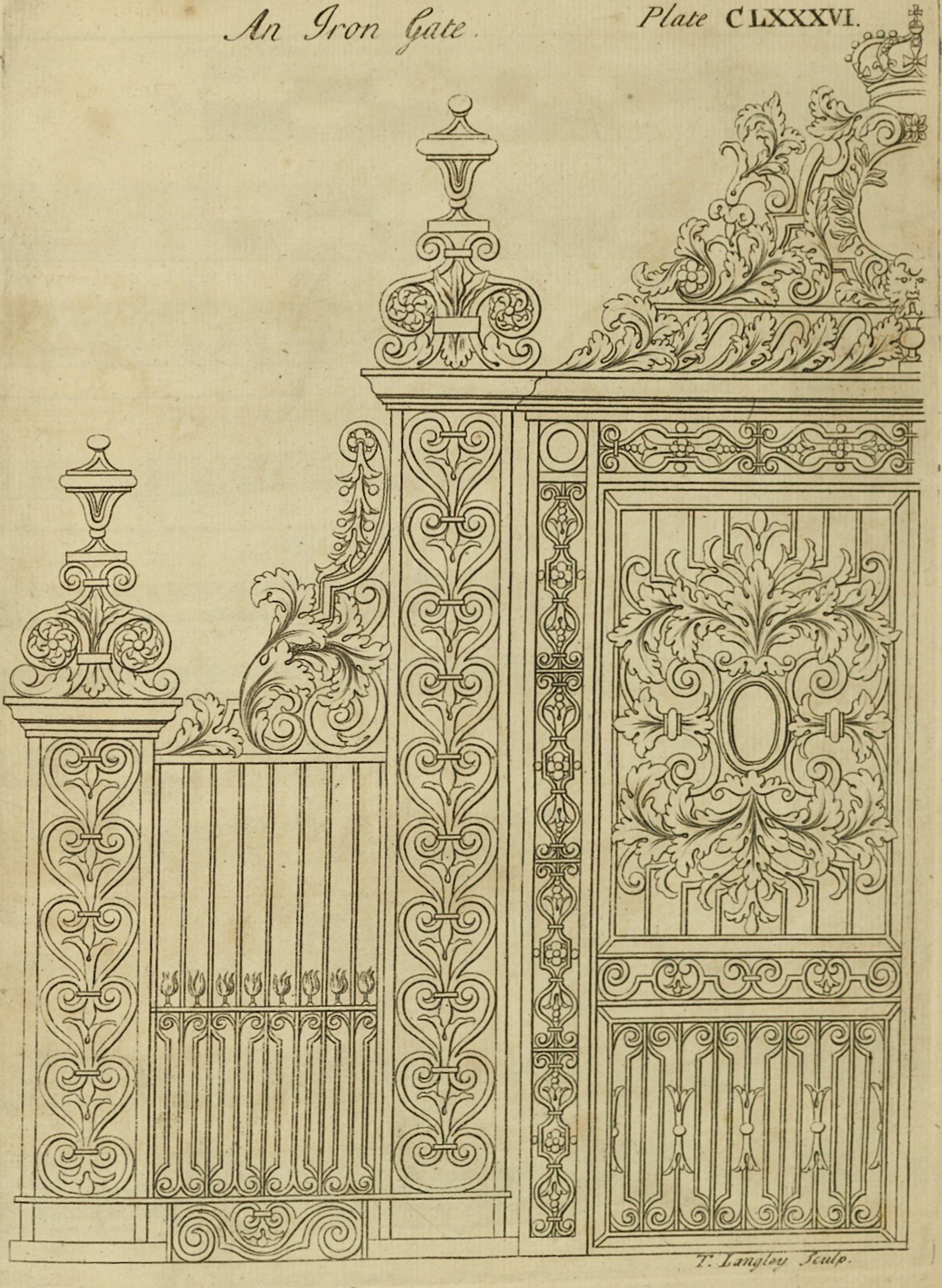
Plate CLXXXV.

Iron Gates.



T. Langley Sculp.

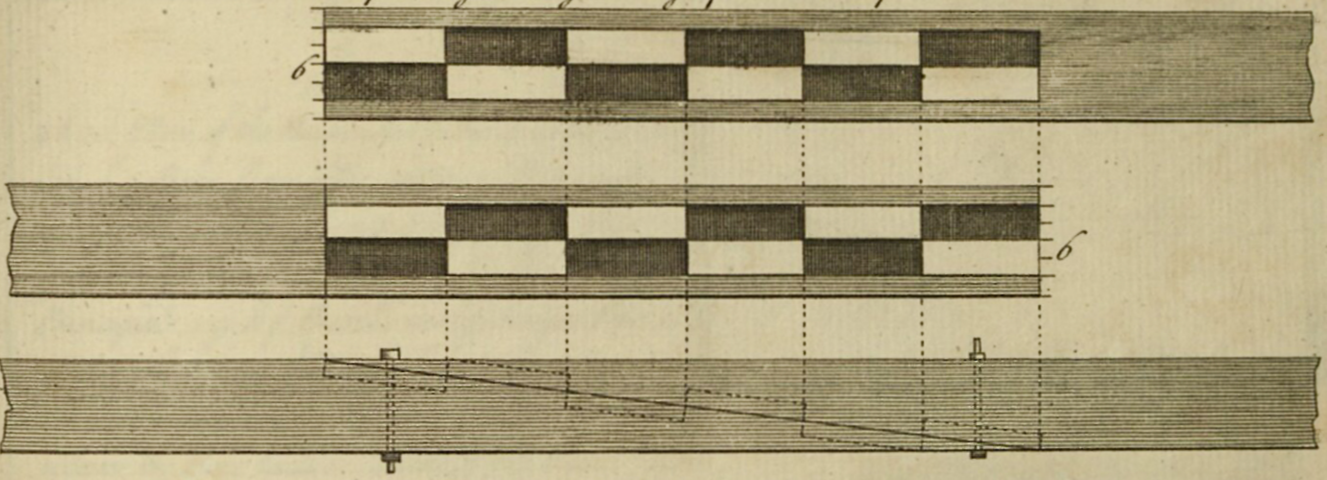
An Iron Gate.



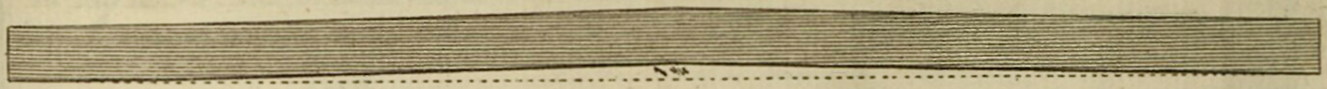
T. Langley Sculp.

The Spliceing or lengthening of Beams Explained

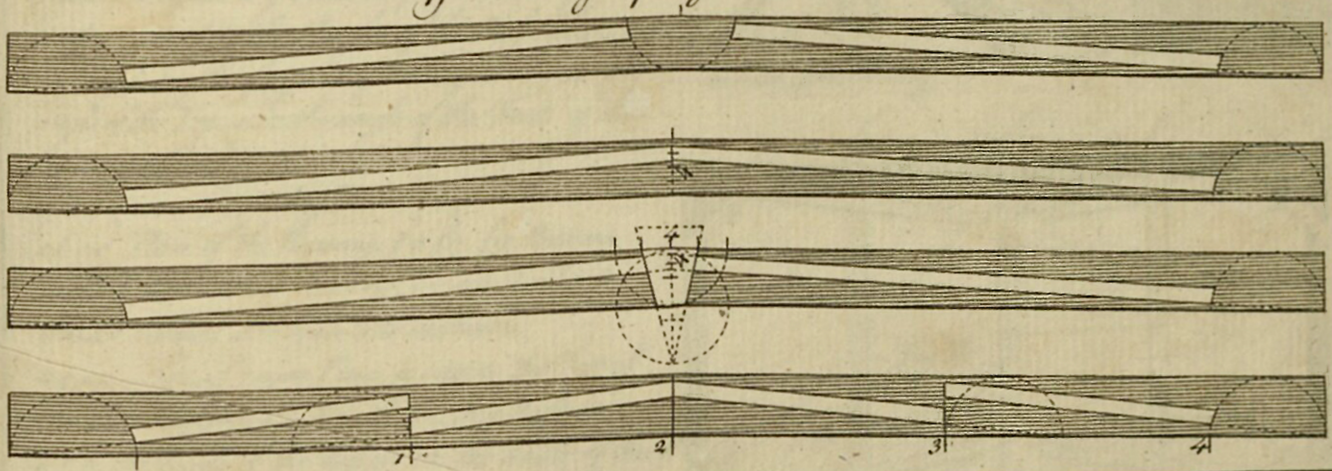
Plate 1.



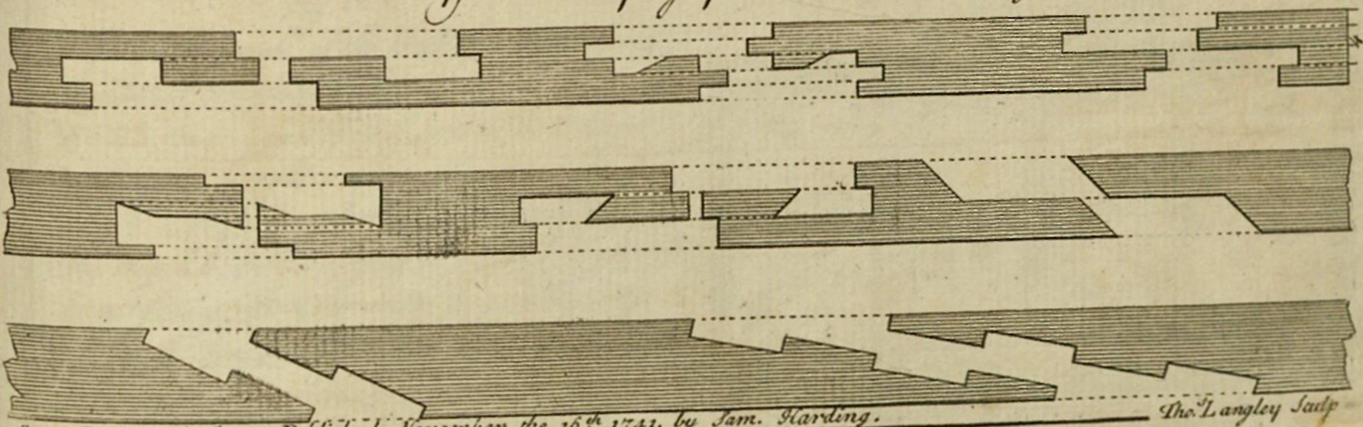
A Beam camber, with an Inch and ¼ Spring; to 25 Feet Extent



Different Truſs's for Girders and Beams



Different Scarfings for Wall Plates, Raisings &c

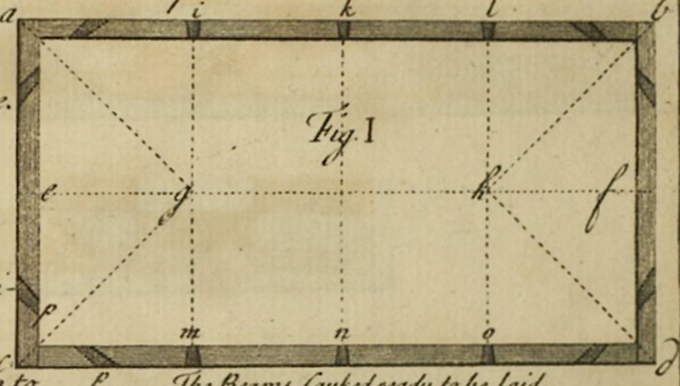


Batty Langley Inv.t 1741 Published November the 16th 1741, by Sam. Harding. Tho.s Langley Sculp

Requisites for Square Roofs *Explained*

Fig I

a b c d, Plan of the Raising. e f, the centeral Line. i m, l o, Base Lines of the outward Principals. a g, g c, b h, h d, Base Lines of ye Hips, g h, Base of the Ridge. k n, Base Line of ye Middle pair of Principals, e g, h f, Base Lines of Single Principals, which meet ye Hips in ye points g h. i k l, m n o, Dove taild Mortises in the Raising, to receive the Dove tails or Cauks 1.2.3. of the Beams, ABC. p p Dove taild Mortises to receive the angle Braces as p p, in Fig III. D a Cauk, or Dove tail at larg. E The Dove tail Mortis in the raising, to receive the Dove tail or Caulk D.


a
i
k
l
b
Fig. I
e
g
h
f
p
c
m
n
o
d
p

The Beams, Cauked ready to be laid on the raising, as in Fig. III

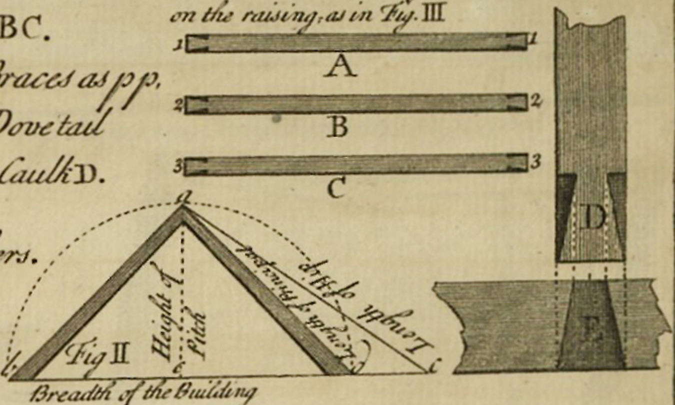

1
A
1
2
B
2
3
C
3
D
E

Fig II

To find the Lengths of the Principal and Hip Rafters. Make d b, equal to ye breadth of the Building, and a c, equal to the Height of the Pitch: Then a b, a d, is ye Length of a pair of Principals, & d a c, the angle of the Top, a d c, the angle of the Foot of the Principal a d.

a
Length of Hip
Length of Principal
Height of Pitch
Fig II
b
c
d
Breadth of the Building

Fig III

a b c d Plan of the Raising. f g, f g, f g, Beams cauked down on ye Raising. p p, p p, &c Angle Braces, cauked down in like manner. a e, b e, c e, d e, Dragon Pieces to receive the Feet of the Hip Rafters. a h, b h, c h, d h, Hip Rafters. a h k, the angle of the Top, & h a k, the angle of the Foot of the Hip a h.

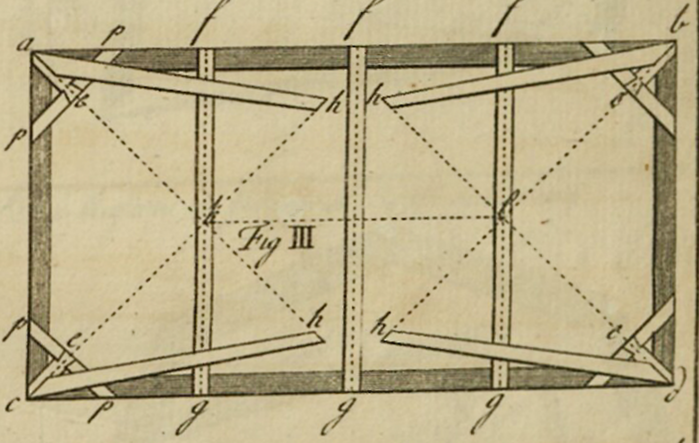

a
p
f
f
f
b
e
h
h
e
p
k
k
Fig III
p
e
h
h
e
c
p
g
g
g
d

Fig IV

To find the angle of the Back of a Hip, in any Regular or Irregular Building.

RULE On any part of its Base line as c, draw a right Line, at right angles, as f g; Set up the Hip as h b, and from c, draw c d, perpendicular to the Hip h b, make c e, equal to c d and draw the Lines f e, e g then the angle f e g, is the angle of the Back required.

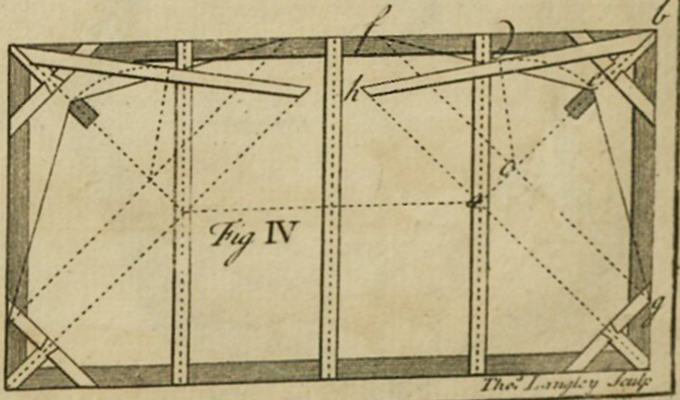

f
b
h
d
c
e
Fig IV
g

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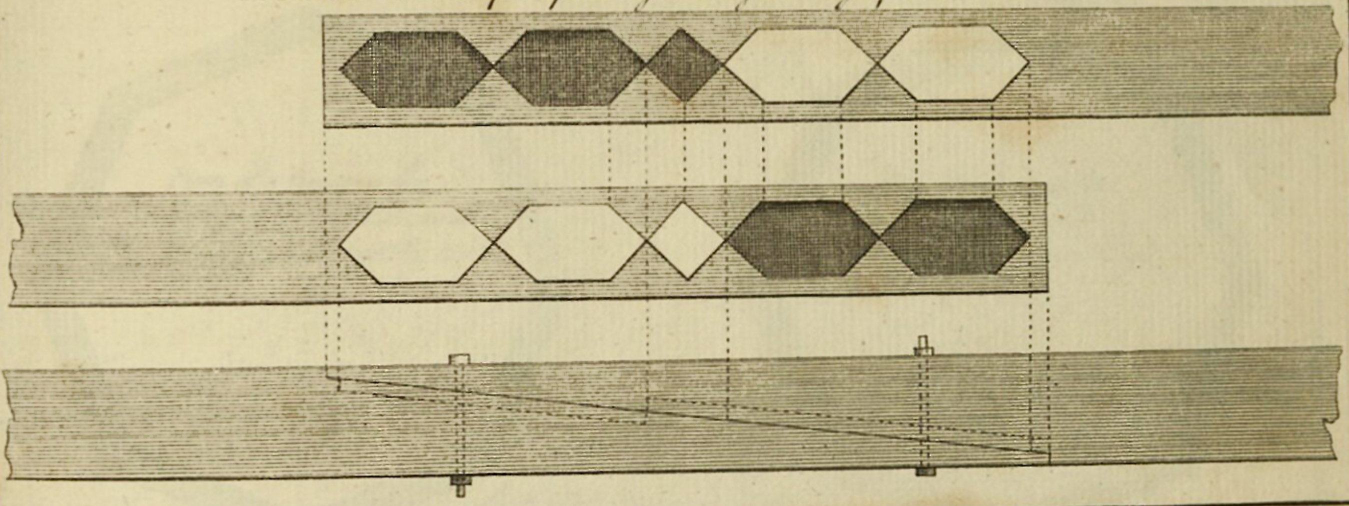
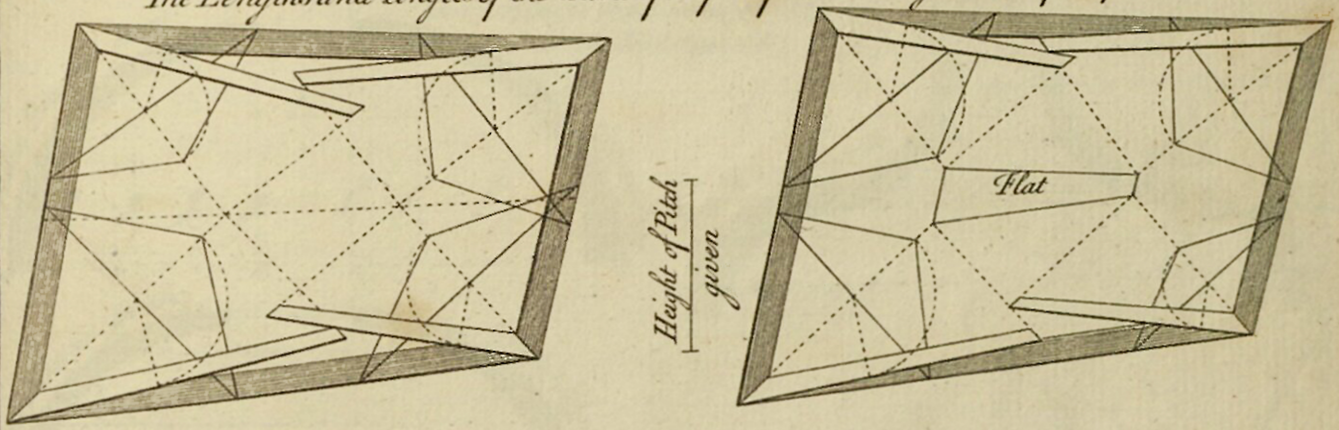
Plate 3

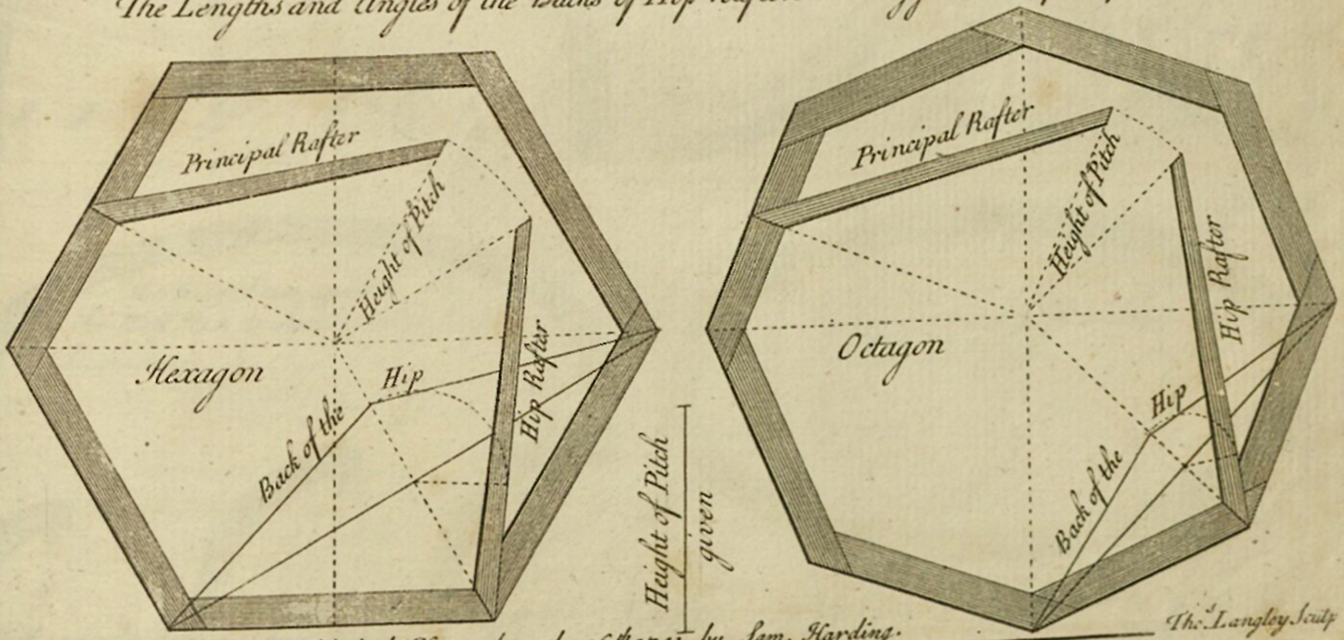
A Second Method for Spliceing or lengthening of Beams



The Lengths and Angles of the Backs of Hip Rafters in Irregular Roofs explained


Flat
Height of Pitch given

The Lengths and Angles of the Backs of Hip Rafters in Polygonal Roofs explained


Principal Rafter
Height of Pitch
Hexagon
Hip
Back of the
Hip Rafter
Height of Pitch given
Principal Rafter
Height of Pitch
Hip Rafter
Octagon
Hip
Back of the

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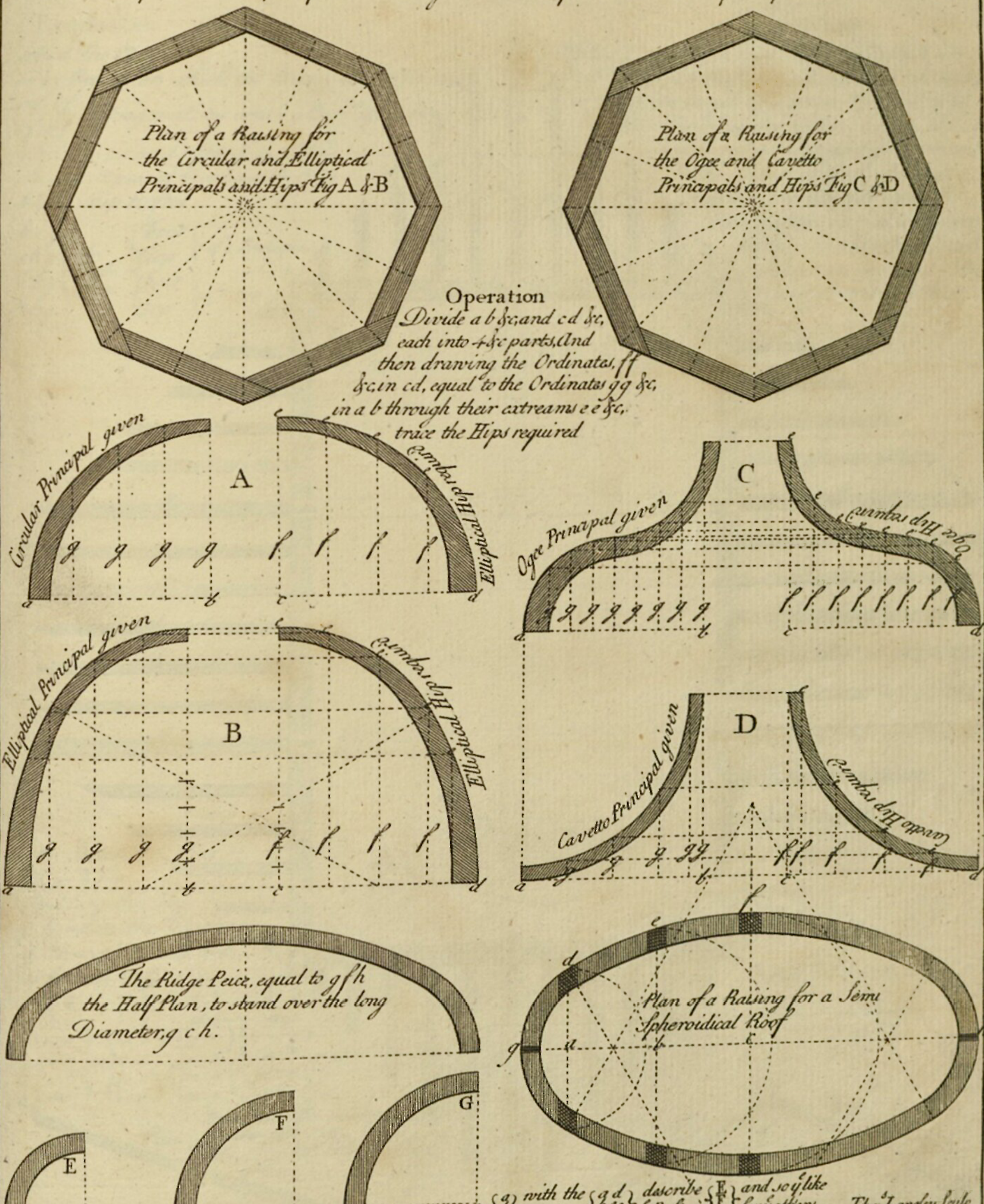
Circular Elliptical &c Hip Rafters to Octangular and Spheroidical Roofs Explained. Plate 4.


Plan of a Raising for the Circular and Elliptical Principals and Hips Fig A & B
Plan of a Raising for the Ogee and Cavetto Principals and Hips Fig C & D
A
Circular Principal given
Elliptical Hip required
B
Elliptical Principal given
Elliptical Hip required
C
Ogee Principal given
Ogee Hip required
D
Cavetto Principal given
Cavetto Hip required
a
b
c
d
e
f
g
The Ridge Peice, equal to g f h the Half Plan, to stand over the long Diameter, g c h.
Plan of a Raising for a Semi Spheroidical Roof
h
E
F
G

Operation

Divide a b &c, and c d &c, each into 4 &c parts, And then drawing the Ordinates, f f &c, in c d, equal to the Ordinates g g &c, in a b through their extreams e e &c, trace the Hips required

On {a b c} with the Radius {a d, e f} describe y^e Rafter {E F G} and so y^e like for y^e others

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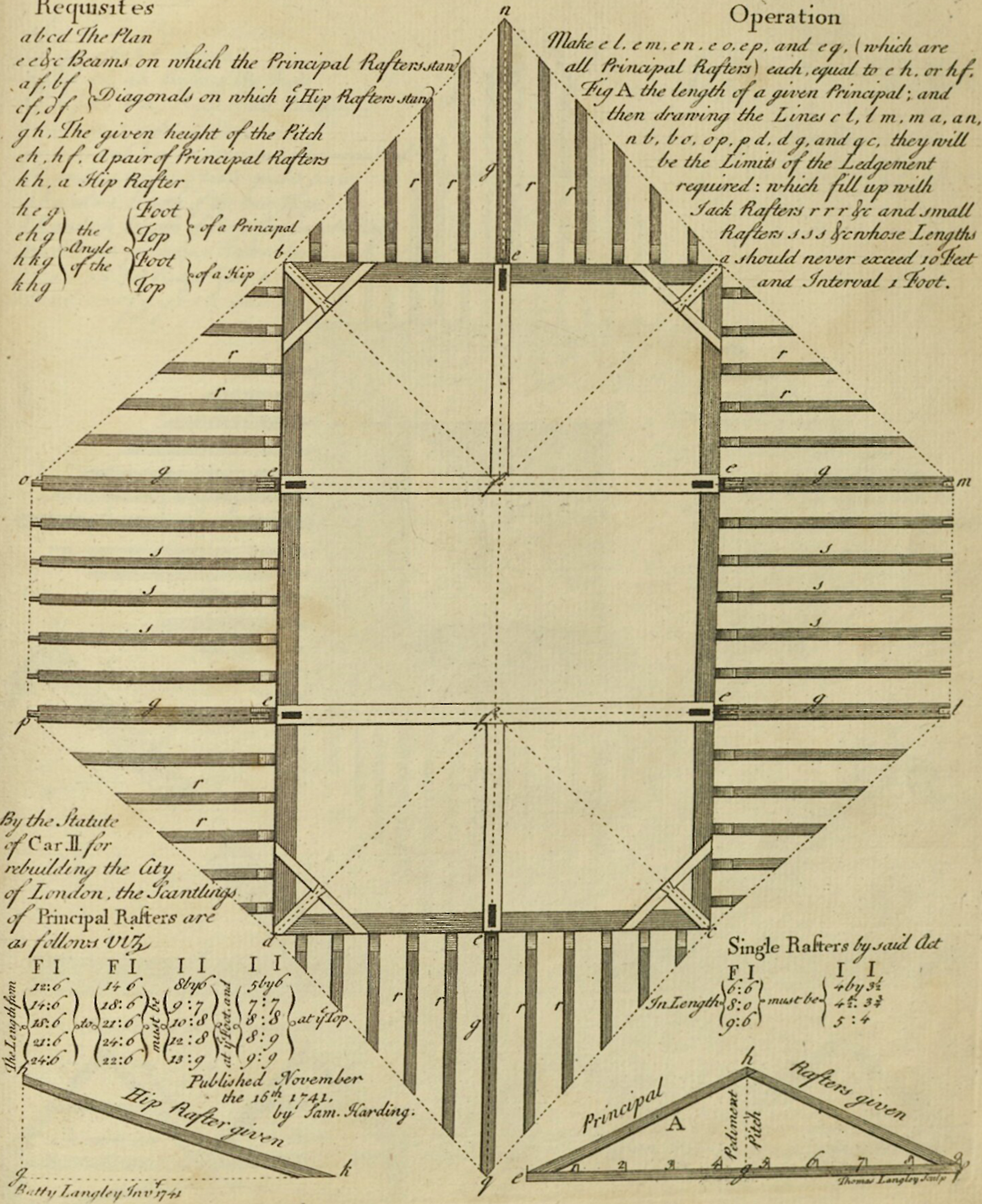
To lay out a Square Roof in Ledgement.

Plate 5.



Requisites

abcd The Plan

ee&c Beams on which the Principal Rafters stand

af, bf, cf, df } *Diagonals on which ye Hip Rafters stand*

gh. The given height of the Pitch

eh, hf. A pair of Principal Rafters

kh. a Hip Rafter

heg	*the Angle of the*	*Foot*	*of a Principal*
ehg		*Top*	
hkg		*Foot*	*of a Hip*
khg		*Top*	

Operation

Make el, em, en, eo, ep, and eq, (which are all Principal Rafters) each, equal to eh, or hf, Fig A the length of a given Principal; and then drawing the Lines cl, lm, ma, an, nb, bo, op, pd, dq, and qc, they will be the Limits of the Ledgement required: which fill up with Jack Rafters rrr &c and small Rafters sss &c whose Lengths should never exceed 10 Feet and Interval 1 Foot.

By the Statute of Car. II. *for rebuilding the City of London, the Scantlings of* Principal Rafters *are as follows viz*

The Length from	F I	*to*	F I	*must be*	I I	*at ye Foot, and*	I I	*at ye Top*
	12:6		14 6		8 by 6		5 by 6	
	14:6		18:6		9:7		7:7	
	18:6		21:6		10:8		8:8	
	21:6		24:6		12:8		8:9	
	24:6		22:6		13:9		9:9	

Single Rafters *by said Act*

	F I		I I
In Length	6:6	*must be*	4 by 3½
	8:0		4½: 3¾
	9:6		5:4

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A Square Double Roof (Commonly called an M Roof) in Ledgement

Plate 6.

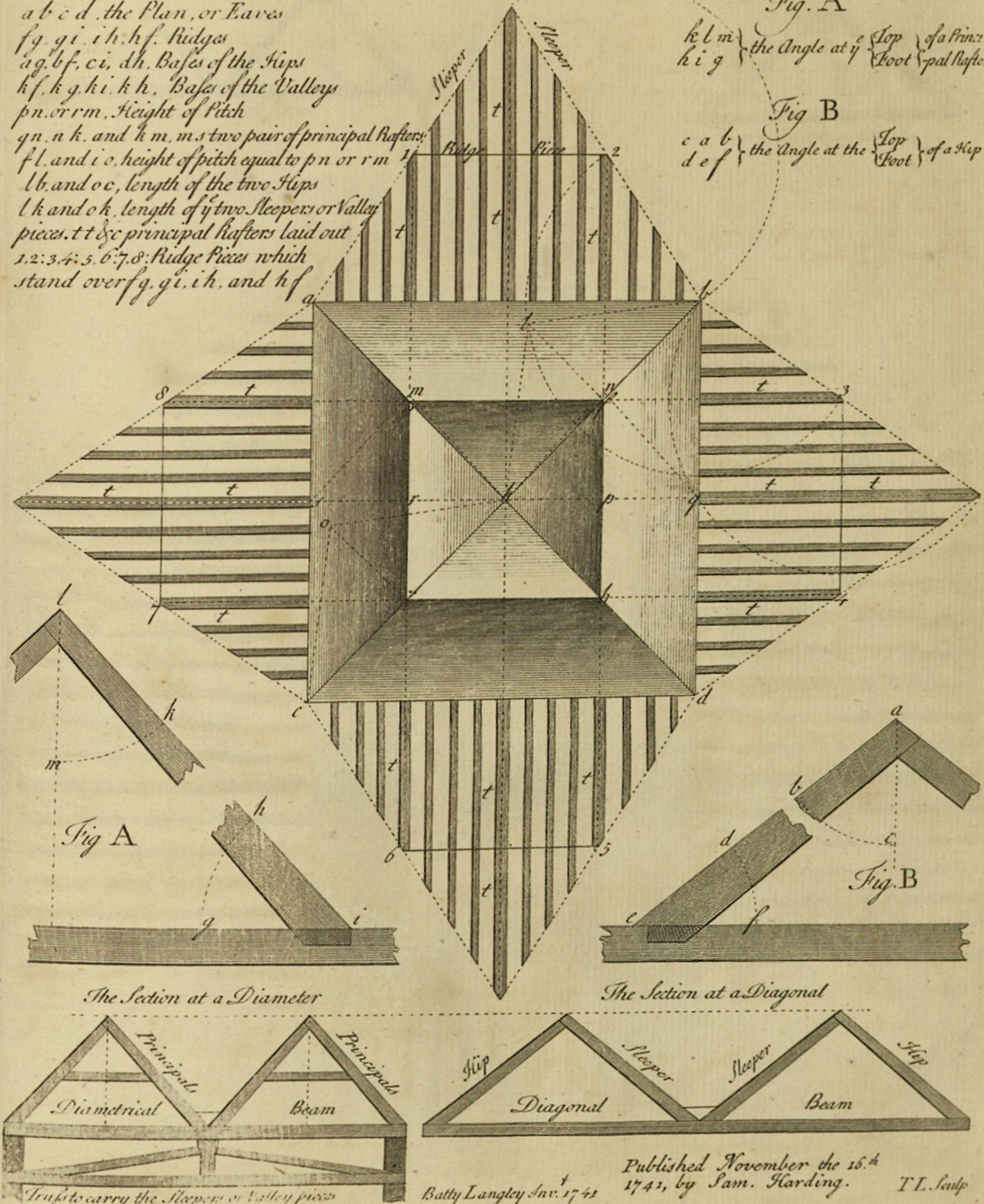
a b c d. the Plan, or Eaves
fg. gi. ih. hf. Ridges
ag. bf. ci. dh. Baſes of the Hips
kf. kg. ki. kh. Baſes of the Valleys
pn. or rm. Height of Pitch
qn. n k. and k m. m s two pair of principal Rafters;
f l. and i o. height of pitch equal to p n or r m
l b. and o c, length of the two Hips
l k and o k. length of ye two Sleepers or Valley pieces. t t &c principal Rafters laid out
1.2: 3.4: 5.6: 7.8: Ridge Pieces which stand over fg. gi. ih. and hf

Fig. A

k l m / h i g } the Angle at ye { Top / Foot } of a Principal Rafter

Fig B

c a b / d e f } the Angle at the { Top / Foot } of a Hip


Sleeper
Sleeper
Ridge Piece
1
2
3
4
5
6
7
8
t
a
b
c
d
l
m
n
o
r
k
p
q
f
g
h
i
Fig A
k
l
m
h
g
i
Fig. B
a
b
c
d
e
f
Principals
Principals
Diametrical
Beam
Hip
Sleeper
Sleeper
Hip
Diagonal
Beam

The Section at a Diameter

The Section at a Diagonal

Truſs to carry the Sleepers or Valley pieces

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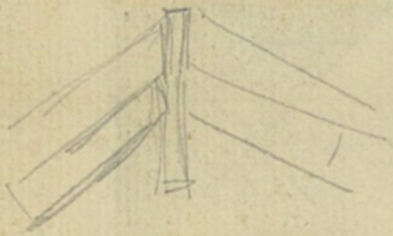
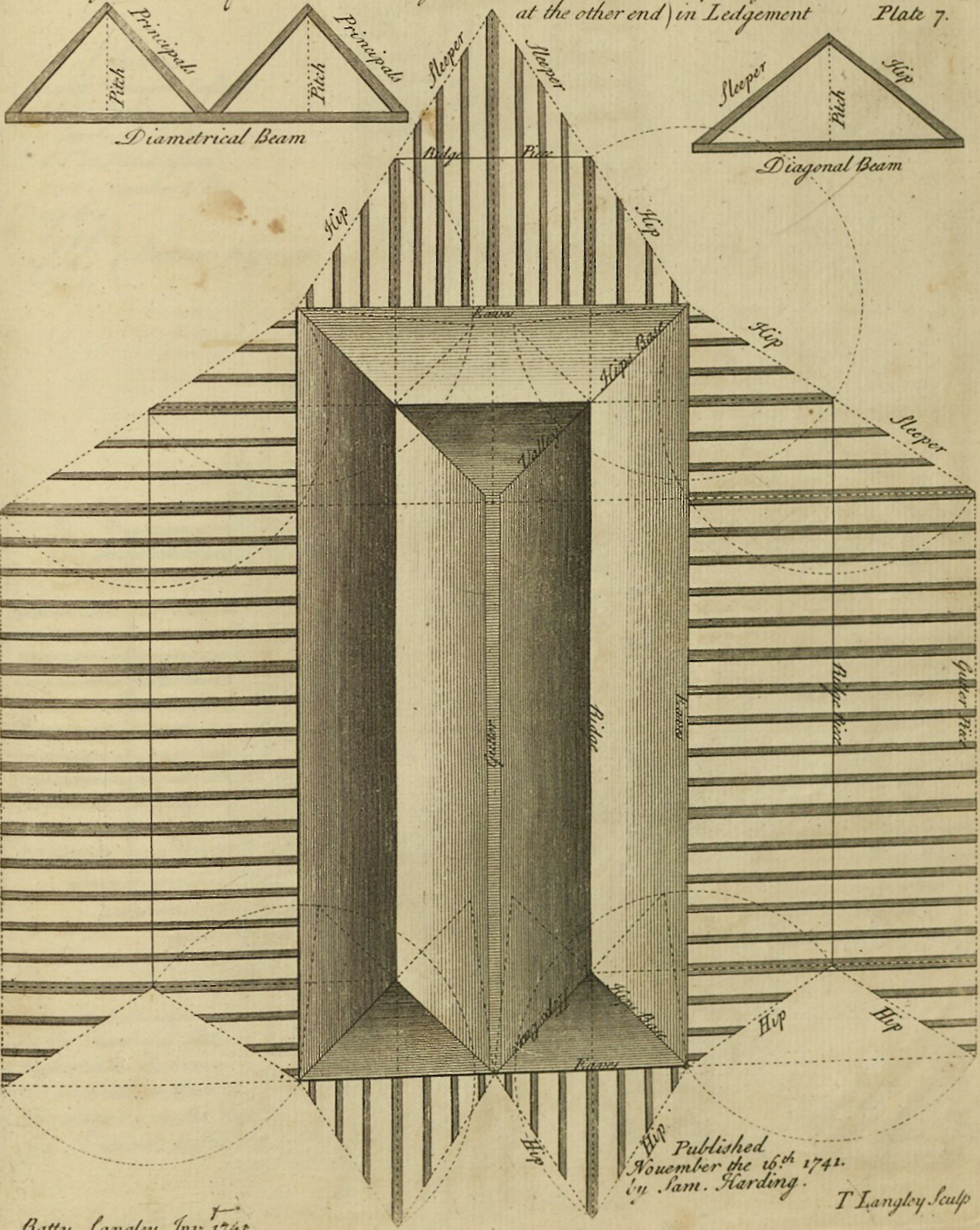


An Oblong Double Roof (returned with single Hips at one End with an open Gutter and Double Hips at the other end) in Ledgement

Plate 7.


Principals
Pitch
Principals
Pitch
Diametrical Beam
Sleeper
Sleeper
Ridge Piece
Sleeper
Hip
Pitch
Diagonal Beam
Hip
Hip
Hip
Eaves
Hip Back
Sleeper
Valley
Gutter
Ridge
Eaves
Ridge Piece
Gutter Piece
Valley
Hip Back
Eaves
Hip
Hip
Hip
Hip

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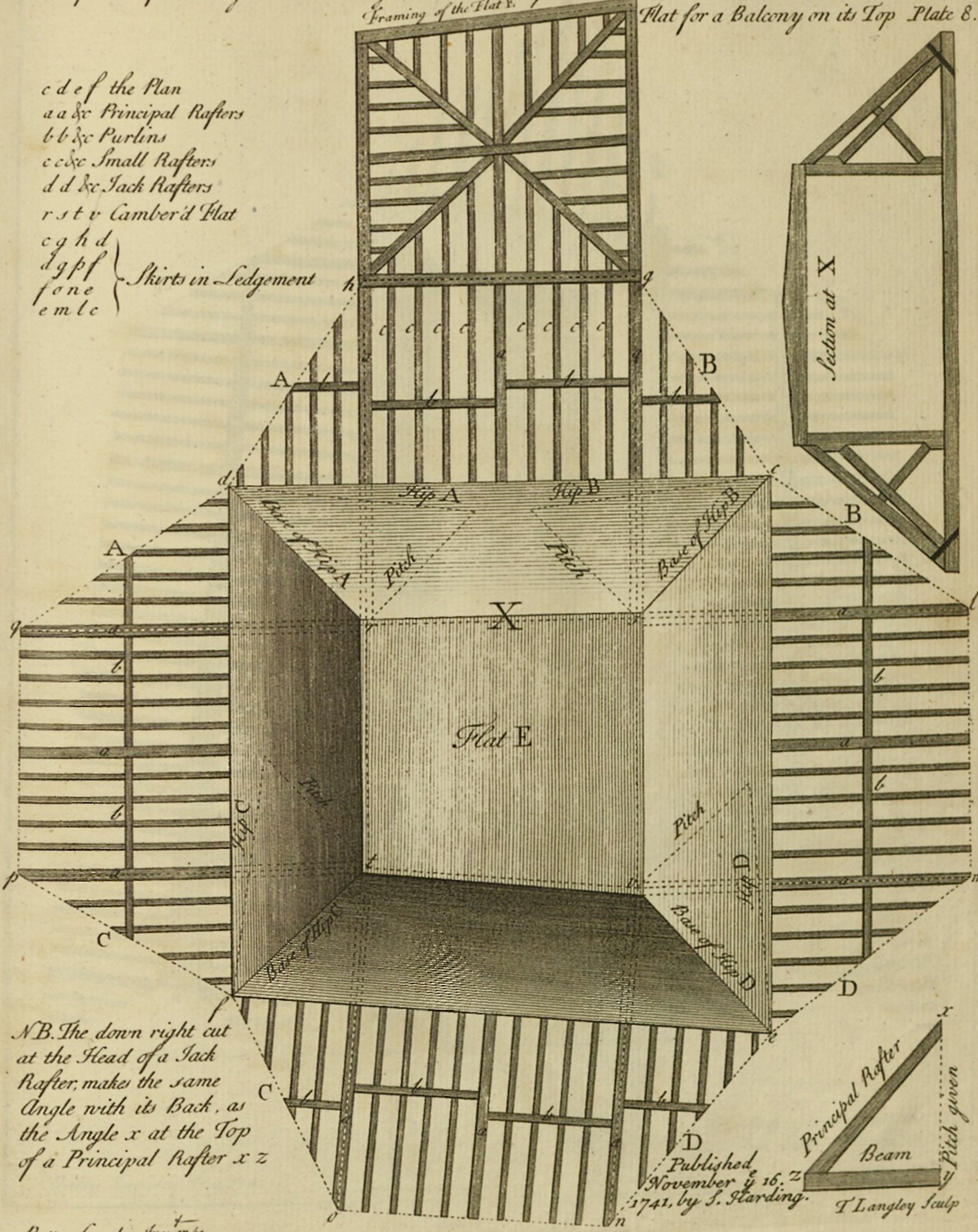
A Hip'd Roof in Ledgement haveing one End Square, and the other End bevel with a Cambre Flat for a Balcony on its Top Plate 8.



Framing of the Flat E
h
q
c c c c c c c c
a
b
A
B
d
c
Hip A
Hip B
Base of Hip A
Pitch
Pitch
Base of Hip B
X
r
s
Flat E
Hip C
Pitch
Pitch
Hip D
t
v
Base of Hip C
Base of Hip D
g
p
l
m
C
D
f
e
o
n
Section at X
Principal Rafter
Beam
Pitch given
x
z
y

c d e f the Plan
a a &c Principal Rafters
b b &c Purlins
c c &c Small Rafters
d d &c Jack Rafters
r s t v Camber'd Flat
c g h d
d g p f
f o n e
e m l c } Skirts in Ledgement

N.B. The down right cut at the Head of a Jack Rafter, makes the same Angle with its Back, as the Angle x at the Top of a Principal Rafter x z

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T Langley Sculp

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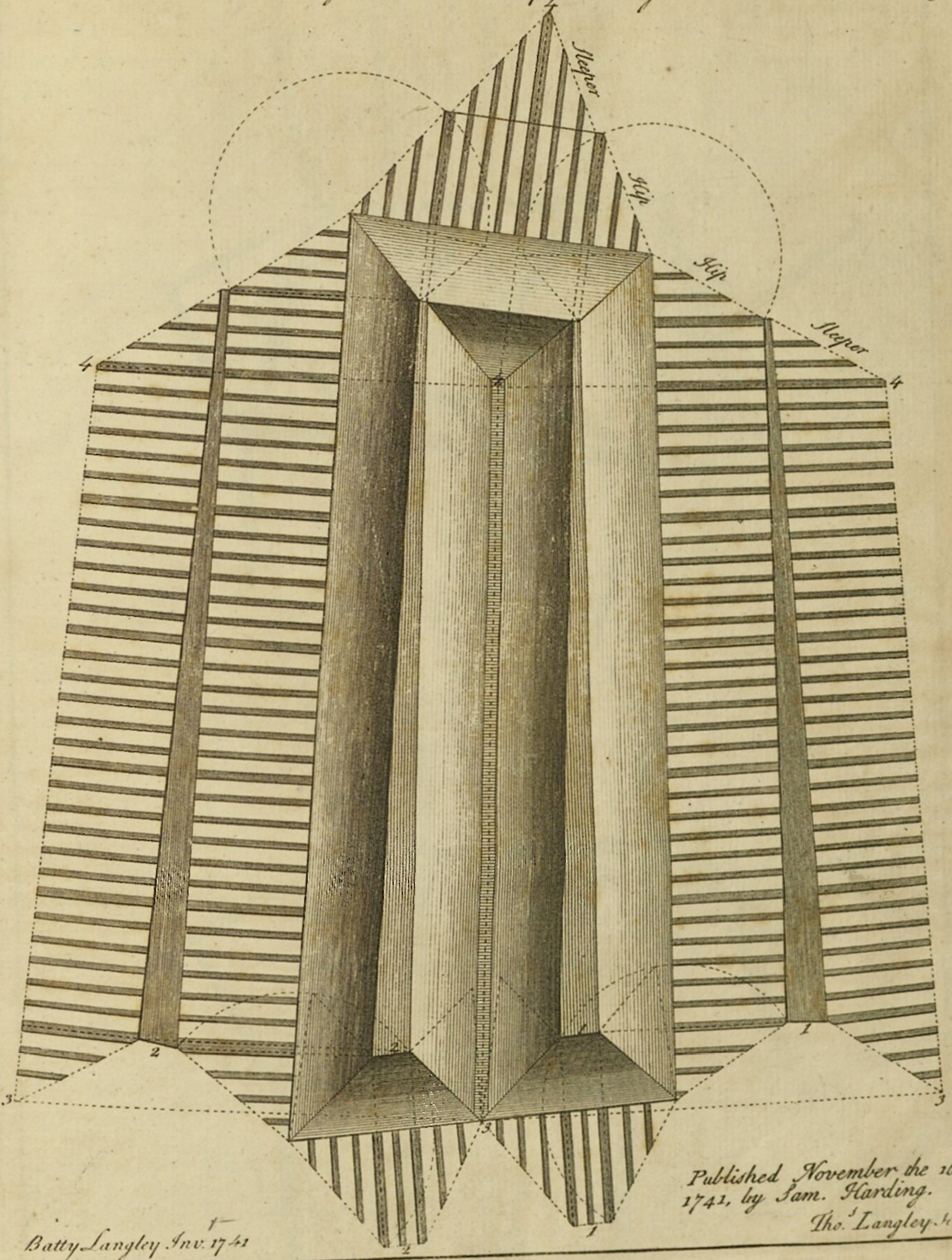
An Irregular Double Roof in Ledgement

Plate. 9.


4
Sleeper
Hip
Hip
Sleeper
4
4
2
1
3
3
3
2
1

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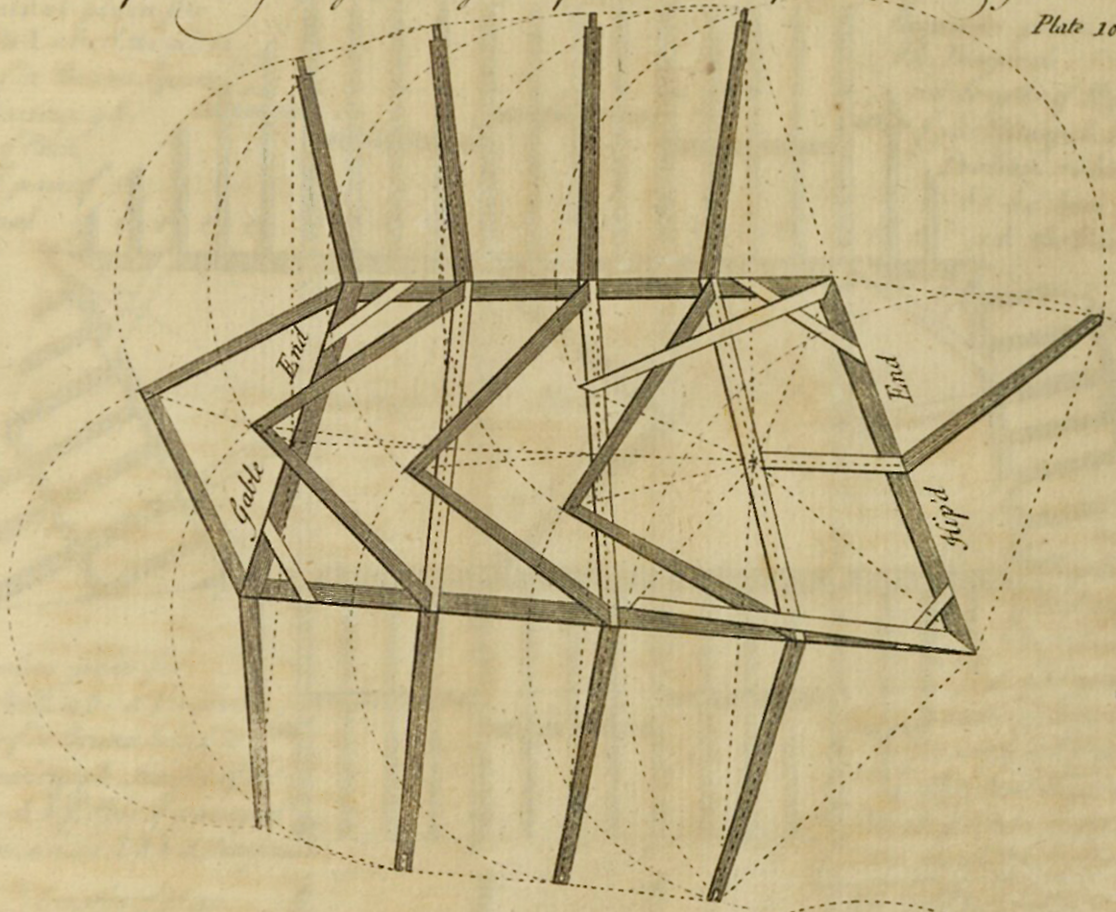
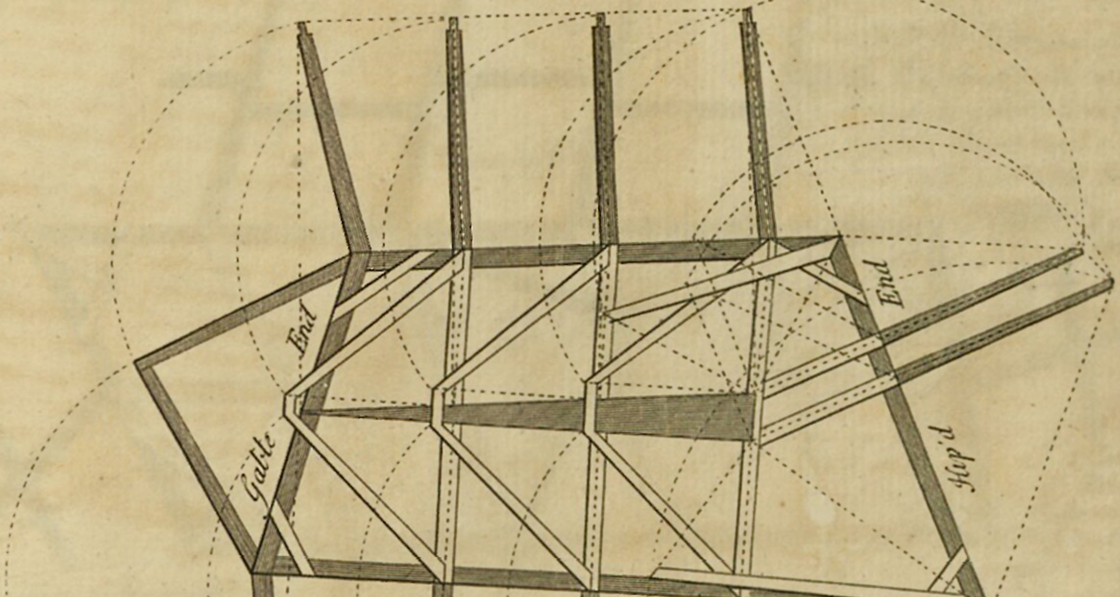
Two Varieties of Framing Irregular single Roofs which are Hip'd at one End & Gabled at ye other

Plate 10.


End
Gable
End
Hip'd


End
Gable
End
Hip'd

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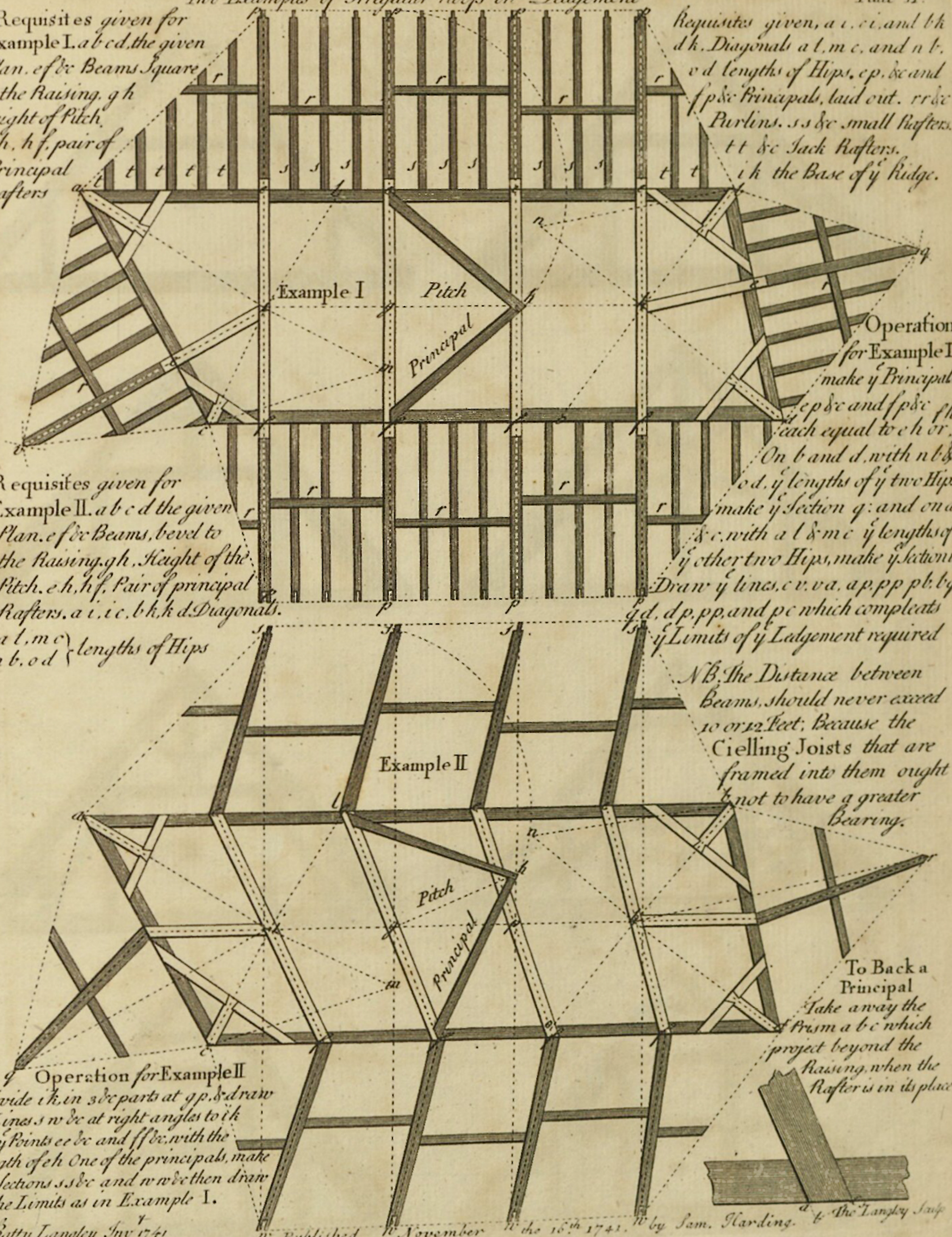
Thomas Langley sc

Two Examples of Irregular Roofs in Ledgement

Requisites *given for* Example I. *a b c d, the given Plan. e f &c Beams Square to the Raising. g h height of Pitch. e h, h f, pair of Principal Rafters*

Requisites given, a i, c i, and b k d k. Diagonals a l, m c, and n b, o d lengths of Hips, e p, &c and f p &c Principals, laid out. r r &c Purlins. s s &c small Rafters. t t &c Jack Rafters. i k the Base of ye Ridge.



Operation *for* Example I. *make ye Principals e p &c and f p &c f h. each equal to e h or, On b and d, with n b & o d, ye lengths of ye two Hips, make ye Section q: and on a & c, with a l & m c ye lengths of ye other two Hips, make ye Section v. Draw ye lines, c v. v a, a p, p p p b. b q q d, d p, p p, and p c which compleats ye Limits of ye Ledgement required*

Requisites *given for* Example II. *a b c d the given Plan. e f &c Beams, bevel to the Raising. g h, Height of the Pitch. e h, h f, Pair of principal Rafters. a i, i c, b k, k d Diagonals.*

a l, m c
n b, o d } *lengths of Hips*

N.B. The Distance between Beams, should never exceed 10 or 12 Feet; Because the Cielling Joists *that are framed into them ought not to have a greater Bearing.*

To Back a Principal

Take away the Prism a b c which project beyond the Raising, when the Rafter is in its place

Operation *for* Example II

Divide i k, in 3 &c parts at g p. & draw ye Lines s w &c at right angles to i k On ye Points e e &c and f f &c, with the length of e h One of the principals, make ye Sections s s &c and w w &c then draw the Limits as in Example I.

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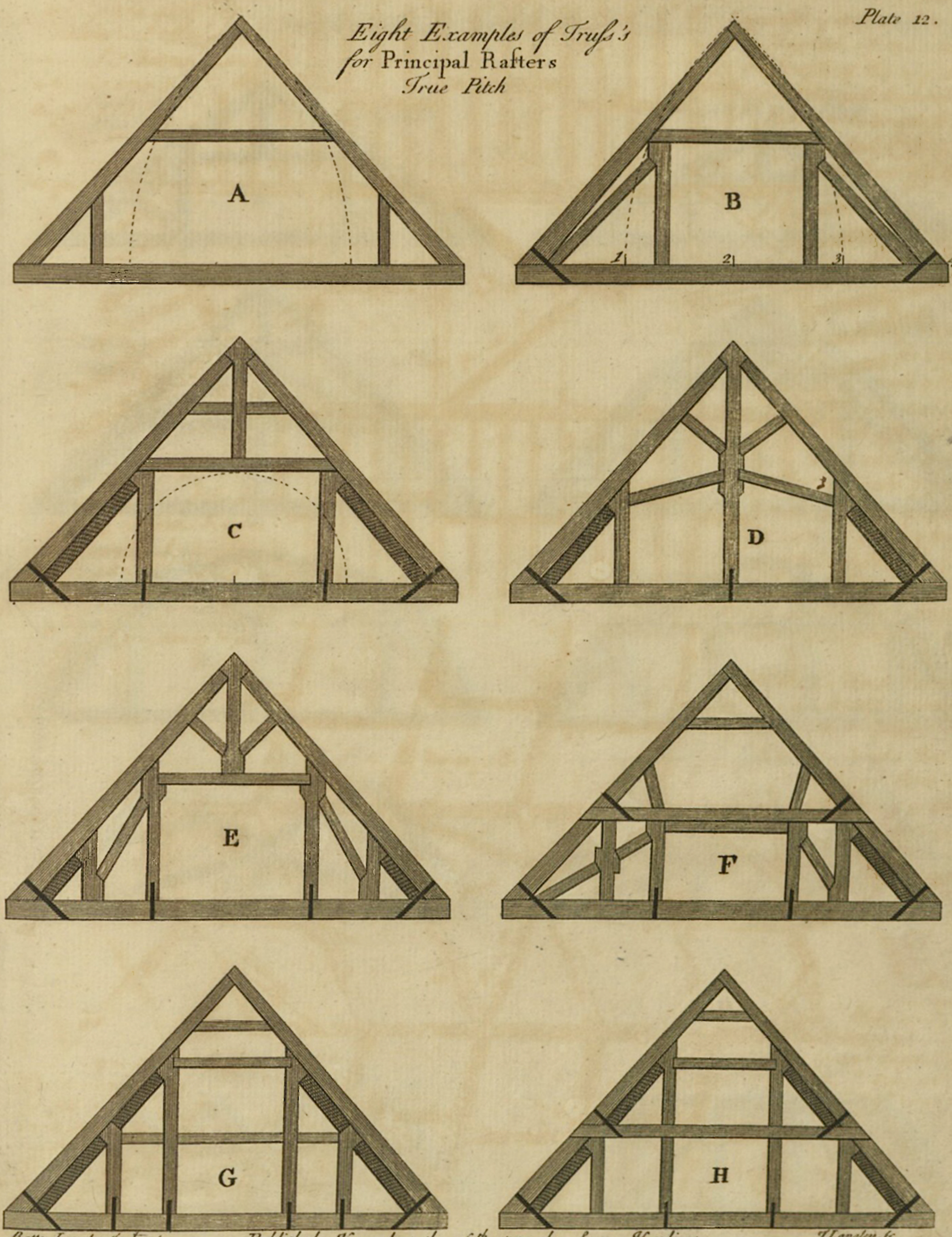
Plate 12.

Eight Examples of Truſs's for Principal Rafters True Pitch



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Ten Examples for Truſs'd Roofs

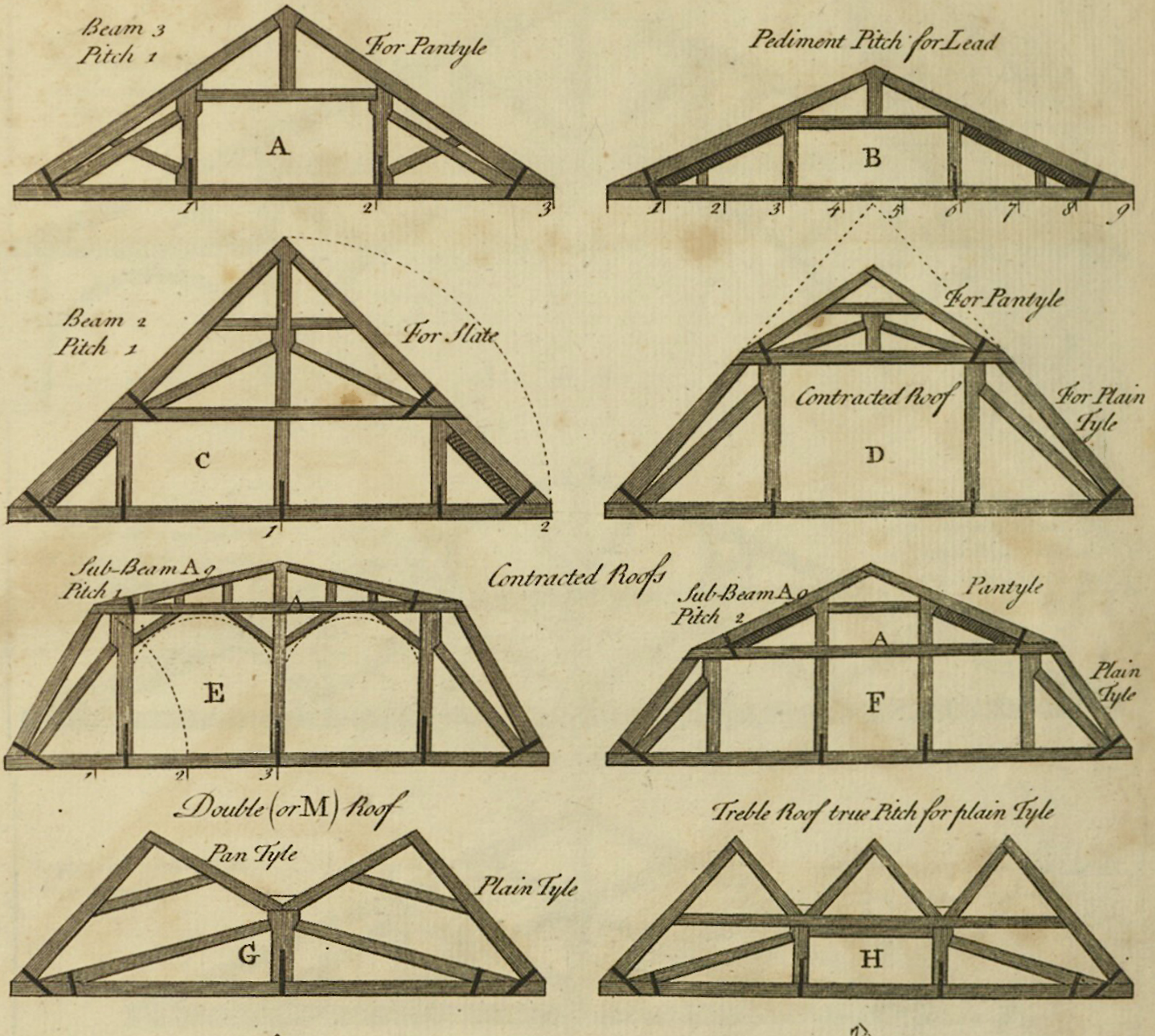
Beam 3
Pitch 1
For Pantyle
A
1
2
3
Pediment Pitch for Lead
B
1
2
3
4
5
6
7
8
9
Beam 2
Pitch 1
For Slate
C
1
2
For Pantyle
Contracted Roof
For Plain Tyle
D
Sub-Beam A 9
Pitch 1
A
E
1
2
3
Contracted Roofs
Sub-Beam A 9
Pitch 2
Pantyle
A
Plain Tyle
F
Double (or M) Roof
Pan Tyle
Plain Tyle
G
Treble Roof true Pitch for plain Tyle
H
Quadruple Roof true Pitch for Slate or Plain Tyle
I
Flat Roof true Pitch
1
2
3
4
5
6
7
K

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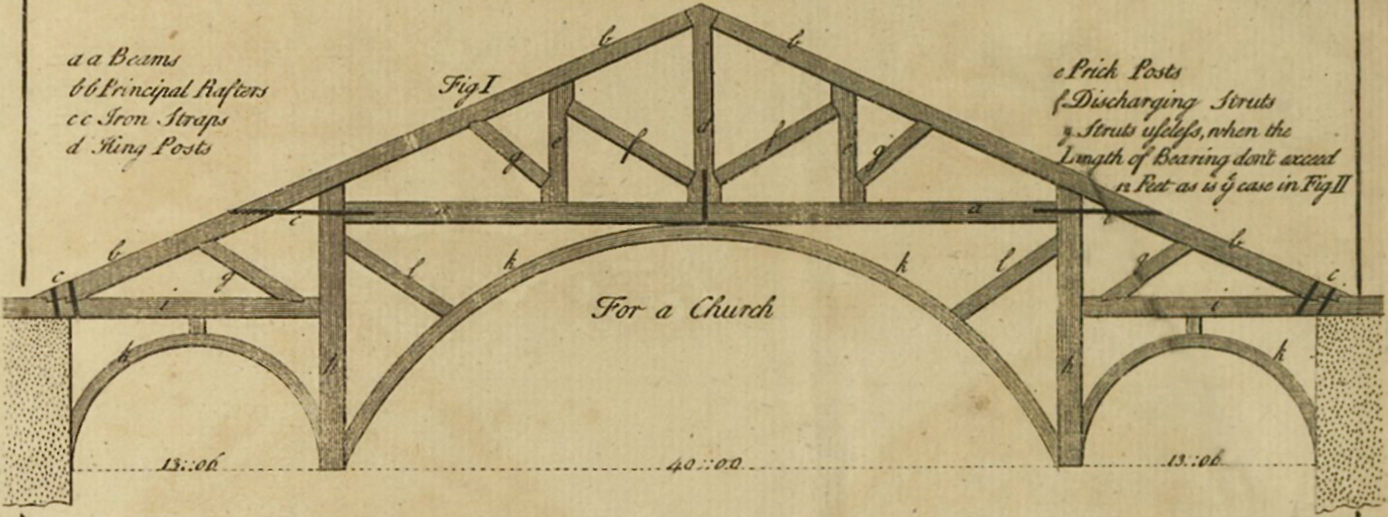
Plate 14.

SECTIONS of Truſs'd Rooſs with Remarks

a a Beams
b b Principal Rafters
c c Iron Straps
d King Posts

e Prick Posts
f Discharging Struts
g Struts uſeleſs, when the Length of Bearing don't exceed 12 Feet as is y^e case in Fig II

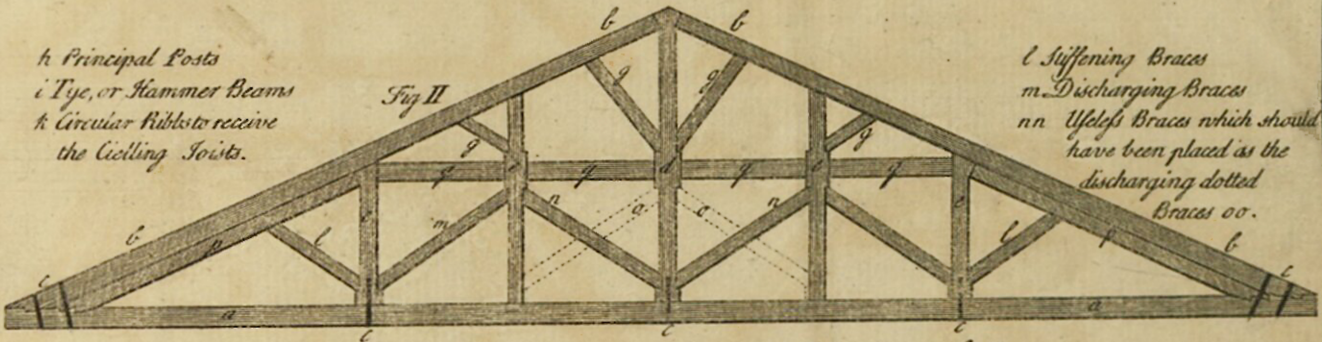
Fig I



h Principal Posts
i Tye, or Hammer Beams
k Circular Riblets to receive the Cieling Joists.

l Stiffening Braces
m Discharging Braces
n n Useleſs Braces which should have been placed as the discharging dotted Braces o o.

Fig II

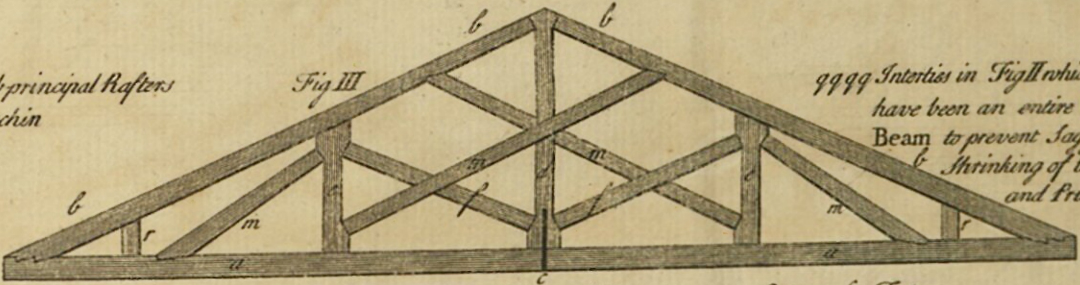


At Greenwich Church in the County of Kent Extent 60 Feet

p p Subprincipal Rafters
r Punchin

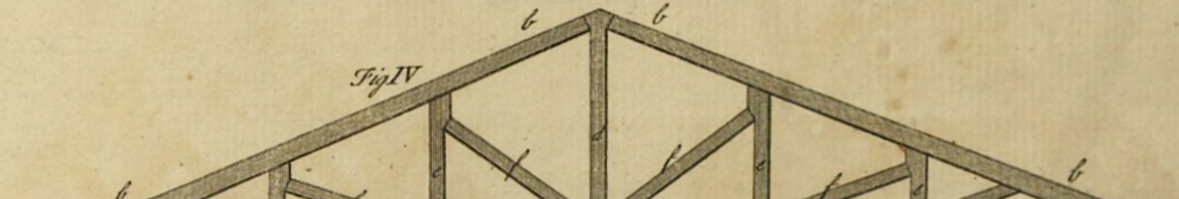
q q q q Interties in Fig II which Should have been an entire Collar Beam to prevent Sagging by the Shrinking of the King Post and Prick Posts.

Fig III



At St Paul Covent Garden in the Liberty of Westminster. Extent 60 Feet

Fig IV



Extent 70 Feet

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1 2
24 . 1 9

1 . 3 . 7

24
6 11